

DRAFT

REGIONAL MOBILITY ELEMENT

THE LONG RANGE TRANSPORTATION PLAN FOR THE SCAG REGION

December 1993

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TO MEET REGIONAL CHALLENGES
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November 22, 1993

Dear Member of the Southern California Community:

I would like to present the Draft Regional Comprehensive Plan (RCP) and the Draft Regional Mobility Element (RME). These are the latest products of SCAG's continuing efforts to provide a long range plan and decision-making framework for the region. They are intended to help meet the challenges of the region's continuing growth and economic changes.

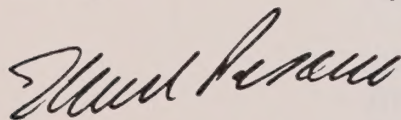
These documents have been prepared by the Staff at SCAG with substantial assistance and input from subregional organizations, County Transportation Commissions, State and federal agencies, other regional organizations, and numerous other public and private parties. They have not been endorsed or approved by any policy body. The SCAG Regional Council will hold extensive public discussion on this Draft Plan prior to its taking any action on the plan during March and April of 1994.

The Draft Regional Mobility Element is the latest update of the Regional Transportation Plan required by federal and state law. It responds to the requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA) and the state and federal Clean Air Acts. It is the basis for more than \$24 billion in federal, state and local investments in transportation that will be made over the next seven years. Without the RME, funding would be stopped until the plan is complete and meets all requirements.

I encourage you to review these plans carefully. SCAG will be hosting workshops for the public in each of the thirteen subregions during the month of January. Notices will be published in local newspapers, and individual notices will be mailed on request. You are encouraged to attend these, and are also welcome to send in your written comments. The Draft Environmental Impact Report will be released on December 10th, and will be reviewed together with these plans. There are also documents which provide technical support to the individual chapters of the RCP, and which are available upon request.

Your comments will be important to SCAG in preparing the final plan documents for adoption, and your contributions will help ensure the kind of participation and support which the plan will need as we face these challenges together.

Sincerely,



MARK PISANO,
Executive Director

Enclosure: Draft Regional Mobility Element

The Draft Regional Comprehensive Plan is being sent under separate cover.

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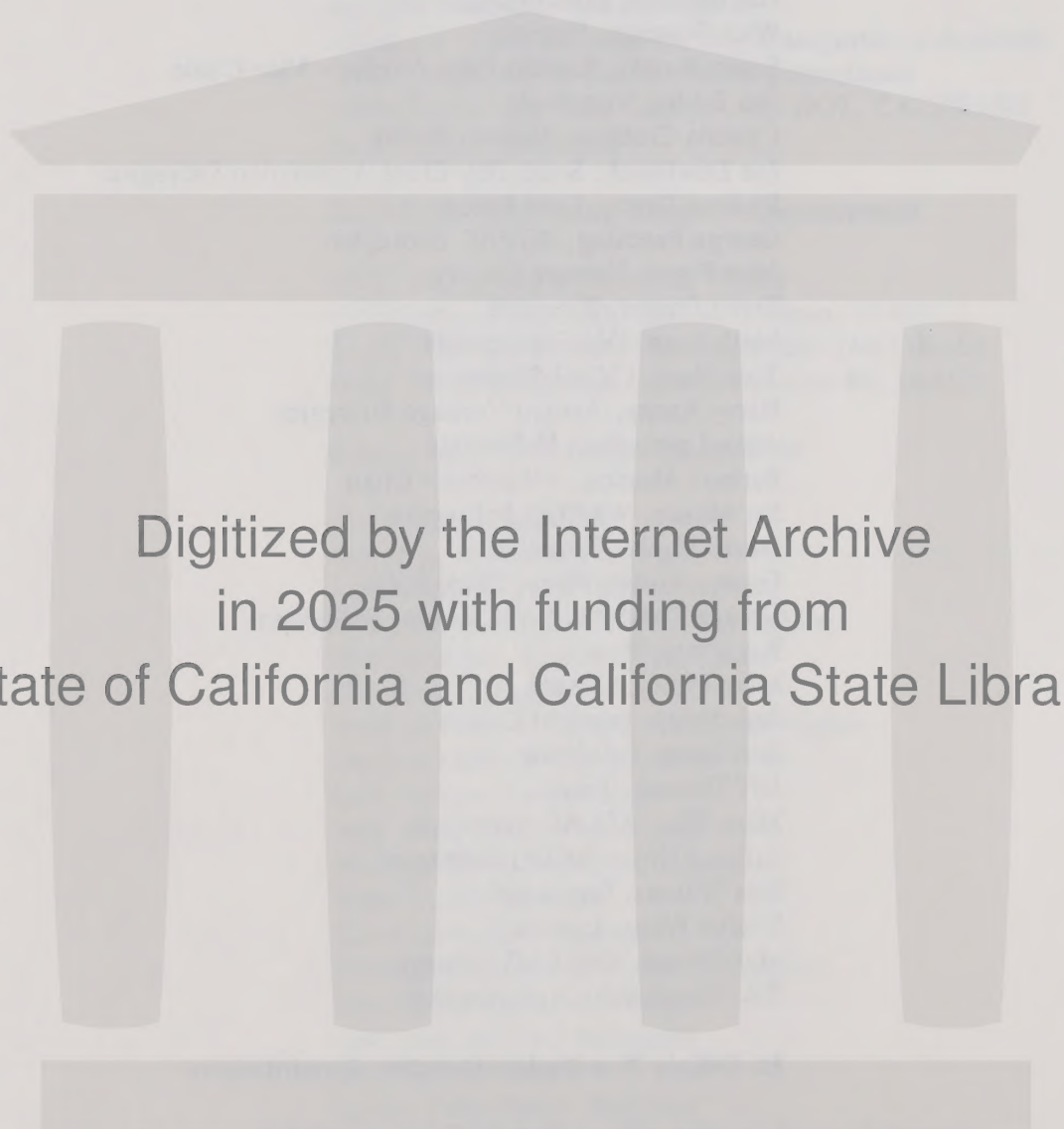
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TABLE OF CONTENTS

SCAG OFFICERS, COMMITTEES, AND MANAGEMENT	i
CHAPTER ONE:	
Introduction	1-1
CHAPTER TWO:	
Executive Summary: Goals, Objectives, Strategies, and Finance	2-1
CHAPTER THREE:	
Regional Transportation Demand Management Program	3-1
CHAPTER FOUR:	
Regional Transit (Bus and Rail) Program	4-1
CHAPTER FIVE:	
Regional Streets and Highways Program	5-1
CHAPTER SIX:	
Regional Non-Motorized Transportation Program	6-1
CHAPTER SEVEN:	
Regional Goods Movement Program	7-1
CHAPTER EIGHT:	
Regional Aviation System Program	8-1
CHAPTER NINE:	
Long-Range Corridors	9-1
CHAPTER TEN:	
Financial Program	10-1
CHAPTER ELEVEN:	
Regional Transportation Control Measure (TCM) Programs	11-1
CHAPTER TWELVE:	
Regional Action Program Summary	12-1
CHAPTER THIRTEEN:	
Socioeconomic Implications	13-1
CHAPTER FOURTEEN:	
Urban Form and Mobility	14-1

GLOSSARY OF TERMS	APPENDIX A
ACKNOWLEDGEMENTS	APPENDIX B
LIST OF CHAPTER AUTHORS	APPENDIX C
SUBREGIONAL INPUT	APPENDIX D
AMENDMENTS PROCESS	APPENDIX E
ISTEA PLANNING FACTORS	APPENDIX F
STATUS OF TSM ACTIONS RECOMMENDED IN THE 1989 RMP	APPENDIX G
SUMMARY OF PERFORMANCE INDICATORS FOR RME MODELING ALTERNATIVES FOR 1990 AND 2010	APPENDIX H
SOCIOECONOMIC FORECAST AND MODELING PAMAMETERS	APPENDIX I
PROJECT INCLUSION CRITERIA	APPENDIX J

LIST OF FIGURES

CHAPTER ONE

Figure 1-1:	SCAG Planning Subregions	1-3
-------------	------------------------------------	-----

CHAPTER TWO

Figure 2-1:	1990 E & F Levels of Service	2-6
Figure 2-2:	Proposed Mixed Flow Projects	2-10
Figure 2-3:	1990 Existing and Proposed High-Occupancy Vehicle Lanes	2-11
Figure 2-4:	1993 Existing and Proposed Urban & Intercity Rail Lines	2-12
Figure 2-5:	1993 Existing and Proposed Commuter Rail Lines	2-13

CHAPTER THREE

Figure 3-1(A):	Existing Transportation Management Associations (TMAs)	3-2
Figure 3-1(B):	1993 Existing Transportation Management Associations (TMAs) and Telecommuting Work Centers	3-3
Figure 3-2:	1990 Activity Areas for Transportation Demand Management (TDM)	3-5
Figure 3-3:	2010 Activity Areas for Transportation Demand Management	3-6

CHAPTER FOUR

Figure 4-1:	Revenue Hours	4-2
Figure 4-2:	Revenue Miles	4-2
Figure 4-3:	Los Angeles County Major Municipal Transit Providers	4-4
Figure 4-4:	Significant Regional Transit Providers	4-5
Figure 4-5:	1993 Intercounty Bus Routes	4-6
Figure 4-6:	1993 Existing and Proposed Commuter Rail Lines	4-7
Figure 4-7:	1993 Existing and Proposed Urban and Intercity Rail Lines	4-8
Figure 4-8:	1990 Activity Centers	4-17
Figure 4-9:	1990 Activity Centers with Three Mile Radius	4-18

CHAPTER FIVE

Figure 5-1:	SCAG Regional Highway System	5-6
Figure 5-2:	Proposed Mixed Flow Projects	5-17
Figure 5-3:	1990 Existing and Proposed High-Occupancy Vehicle Lanes	5-18
Figure 5-4:	1990 Existing and Proposed Ramp Meters	5-23
Figure 5-5:	1990 Park-N-Ride Lots	5-24
Figure 5-6:	1989 System of Regional Significance	5-30
Figure 5-7:	1990 National Highway System	5-33

CHAPTER SIX

Figure 6-1:	1993 Class One Bicycle Routes	6-2
-------------	---	-----

CHAPTER SEVEN

Figure 7-1:	1990 Goods Movement in the Western SCAG Region	7-4
Figure 7-2:	1990 Goods Movement in the Eastern SCAG Region	7-5
Figure 7-3:	1990 Existing Rail Port Access for Los Angeles/Long Beach	7-6
Figure 7-4:	1990 Existing and Demonstration Truck Port Access for Los Angeles/Long Beach	7-7
Figure 7-5:	1990 Access for Port Hueneme	7-8
Figure 7-6:	Markets Served by Different Modes	7-12
Figure 7-7:	Major Issues and Impacts Associated with Goods Transportation . . .	7-14

CHAPTER EIGHT

Figure 8-1:	1993 Regional Airport System	8-2
-------------	--	-----

CHAPTER NINE

Figure 9-1:	Post 2010 Long Range Corridors	9-2
-------------	--	-----

CHAPTER ELEVEN

Figure 11-1:	1990 SCAG Region Air Basins	11-2
Figure 11-2:	1990 SCAG Region Air Districts	11-3

CHAPTER THIRTEEN

Figure 13-1:	Race/Ethnic Origin 1980 & 1990	13-2
Figure 13-2:	Population, Vehicle, & Drivers in the SCAG Region	13-3
Figure 13-3:	Daily Trip Generation	13-3

LIST OF TABLES

CHAPTER ONE

Table 1-1:	Subregions	1-2
------------	----------------------	-----

CHAPTER TWO

Table 2-1:	RCP and RME Goals	2-2
Table 2-2:	RME Goals and Subgoals	2-3
Table 2-3:	Federal and State Legally Required Objectives (Performance Targets): Mobility and Air Quality	2-4
Table 2-4:	Comparison of 2010 Emission Goals to RME Alternatives' Emissions	2-7
Table 2-5:	Mix of Strategies	2-7
Table 2-6:	RME Alternatives Compared for Performance	2-8
Table 2-7:	Reasonably Available Funding Criteria	2-9
Table 2-8:	Third-Tier Transit System Expansion	2-15
Table 2-9:	Market Incentives/Pricing Mechanisms	2-17
Table 2-10:	Federal and State Transportation Control Measures Requirements	2-23
Table 2-11:	1993 Regional Mobility Element Cost-Revenue Summary 1991-2010	2-26

CHAPTER THREE

Table 3-1:	Implementation of TDM Measures	3-2
Table 3-2:	CMP Implementation of TDM Strategies	3-10
Table 3-3:	Market Incentive Principles	3-12
Table 3-4:	Subregionally Recommended Implementation Programs	3-13

CHAPTER FIVE

Table 5-1:	Status of the Toll Road Projects	5-4
Table 5-2:	Summary of Performance Indicators for 1990 Regional System	5-8
Table 5-3:	Subregionally Recommended Implementation Program	5-11
Table 5-4:	SCAG Region Subarea Input	5-15
Table 5-5:	Total Mixed-Flow & HOV Lane Miles Added by County 1990-2010	5-16
Table 5-6:	Proposed Capacity Expansions by Improvement Type 1990-2010 . . .	5-19
Table 5-7:	Summary of CMP CIP Projects	5-21
Table 5-8:	Intelligent Vehicle Highway System (IVHS) Programs	5-34
Table 5-9:	Los Angeles County Potential Smart Street Corridors	5-36
Table 5-10:	Orange County Potential Smart Street Corridors	5-37

CHAPTER SIX

Table 6-1:	Subregionally Recommended Implementation Program	6-6
------------	--	-----

CHAPTER SEVEN

Table 7-1:	A Selected Listing of Government Agencies and Their Influence on Goods Movement in the SCAG Region	7-10
Table 7-2:	Markets Served by Different Modes	7-11
Table 7-3:	Subregionally Recommended Implementation Program	7-16

CHAPTER TEN

Table 10-1:	1993 Regional Mobility Element Cost-Revenue Summary 1991 - 2010	10-15
Table 10-2A:	1993 Regional Mobility Element Cost-Revenue Summary Imperial County	10-16
Table 10-2B:	1993 Regional Mobility Element Cost-Revenue Summary Los Angeles County	10-17
Table 10-2C:	1993 Regional Mobility Element Cost-Revenue Summary Orange County	10-18
Table 10-2D:	1993 Regional Mobility Element Cost-Revenue Summary Riverside County	10-19
Table 10-2E:	1993 Regional Mobility Element Cost-Revenue Summary San Bernardino	10-20
Table 10-2F:	1993 Regional Mobility Element Cost-Revenue Summary Ventura County	10-21

CHAPTER ELEVEN

Table 11-1:	Status of Non-Attainment Area	11-1
Table 11-2:	TCM Requirements	11-5
Table 11-3:	Federal Reasonably Available TCMs Section 108(f)	11-6
Table 11-4:	Subregional TCM Recommendations	11-10
Table 11-5:	Existing Principles for Programming of STP and CMAQ Funds Related to TCMs	11-17

CHAPTER TWELVE

Table 12-3:	TDM: Short/Long-Range Program (7/20 Year Program)	12-1
Table 12-4A:	Short-Range Program	12-4
Table 12-4B:	Long-Range Bus and Rail Program	12-6
Table 12-5A:	Total Mixed-Flow and HOV Lane Miles Added by County 1990-2010	12-7
Table 12-5B:	Proposed Capacity Expansions by Improvement Type 1990-2010	12-7
Table 12-5C:	Summary of CMP CIP Projects	12-9
Table 12-5D:	Los Angeles County Potential Smart Street Corridors	12-11
Table 12-5E:	Orange County Potential Smart Street Corridors	12-12
Table 12-6:	Recommended Action Program	12-13
Table 12-7A:	Short-Range Goods Movement Action Programs	12-16
Table 12-7B:	Long-Range Goods Movement Programs	12-17
Table 12-8A:	Short-Range Aviation Program	12-18
Table 12-8B:	Long-Range Aviation Programs	12-19
Table 12-9A:	Short-Range	12-19

Table 12-9B: Long-Range	12-19
Table 12-13A: Recommended Short Term Socio-Economic Actions	12-20
Table 12-13B: Recommended Long Term Socio-Economic Actions	12-20

CHAPTER ONE: INTRODUCTION

The Draft Regional Mobility Element (RME) is summarized in chapter four of the Regional Comprehensive Plan (RCP)*; and it is a stand-alone document that serves as both the federal and state Transportation Plan for the SCAG region. The Draft RME, when formally adopted, will replace the 1989 Regional Mobility Plan (RMP) as the guide for mobility planning for the Southern California region.

The RME establishes the goals, objectives (performance targets), policies, and actions to address the region's mobility issues. The planning period is from 1990 to 2010. The RME analysis is based on current demographics, statistics, and computer projections. A modeled alternative for 2015 will be analyzed in the Draft EIR. As part of SCAG's "bottom-up" outreach efforts, special emphasis is placed on securing information on issues of concern to subregions, cities, and counties (For subregional organizations and membership, see Table 1-1, Subregions, and Figure 1-1, SCAG Planning Subregions).

The RME is integrally tied to transportation budgeting and actual project implementation via its role in the Regional Transportation Improvement Program (RTIP) process. Projects proposed for the RTIP must formally be deemed to be consistent with the goals, objectives, and other assumptions premised in the Draft RME.

In addition to guiding regional transportation decision-makers, the RME will provide a framework for input and comment by the SCAG region on statewide long-range planning, development, operation, and maintenance issues that will be considered in the California Transportation Plan.

The RME has been developed through a cooperative planning effort involving county transportation commissions, Caltrans, cities, counties, subregional associations, California Air Resources Board, air districts, public interest groups, and other organizations representing the public. The RME has evolved from the July, 1993 Preliminary Draft Discussion Document, and has had the benefit of on going public review--including workshops, policy and technical committees meetings, written comments, and documents presented by subregional associations.

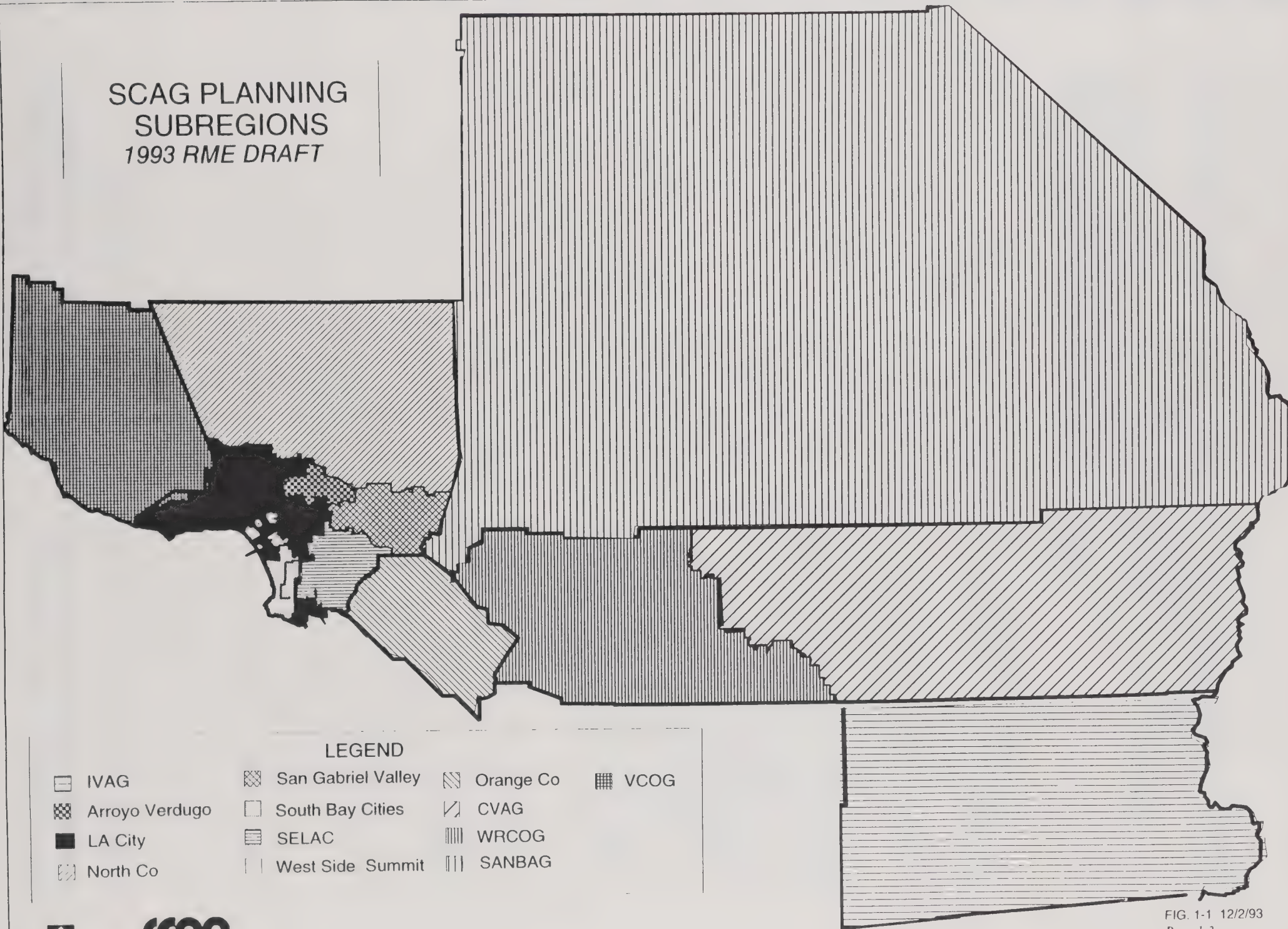
The RME considers computer modeled scenarios for the year 2010. The scenarios are made up of a mix of six strategies: facility development, system management, demand management, urban form, technology, and pricing.

* A copy of the complete Draft Regional Comprehensive Plan may be obtained by contacting SCAG.

**TABLE 1-1
SUBREGIONS**

Imperial Valley Association of Governments (IVAG) Imperial County, Brawley, Calexico, Calipatria, El Centro, Holtville, Imperial, Westmoreland,
Coachella Valley Association of Governments (CVAG) County of Riverside, Blythe, Cathedral City, Coachella, Desert Hot Springs, Indio, Indian Wells, La Quinta, Palm Desert, Palm Springs, Rancho Mirage
Western Riverside Council of Governments (WRCOG) Riverside County, Banning, Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Moreno Valley, Murrieta, Norco, Perris, Riverside, San Jacinto, Temecula
San Bernardino Association of Governments (SANBAG) San Bernardino County, Adelanto, Apple Valley, Barstow, Big Bear Lake, Chino, Chino Hills, Colton, Fontana, Grand Terrace, Hesperia, Highland, Loma Linda, Montclair, Needles, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Twentv Nine Palms, Upland, Victorville, Yucca Valley, Yucaipa
Orange County Orange County, Anaheim, Brea, Buena Park, Costa Mesa, Cypress, Dana Point, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, Laguna Beach, Laguna Hills, Laguna Niguel, La Habra, Lake Forest, La Palma, Los Alamitos, Mission Viejo, Newport Beach, Orange, Placentia, San Clemente, San Juan Capistrano, Santa Ana, Seal Beach, Stanton, Tustin, Villa Park, Westminster, Yorba Linda
Southeast Los Angeles County (SELAC) Los Angeles County, Artesia, Bell, Bellflower, Bell Gardens, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, Lakewood, La Habra Heights, La Mirada, Long Beach, Lynwood, Maywood, Montebello, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, Vernon, Whittier
San Gabriel Valley Association of Cities Los Angeles County, Alhambra, Arcadia, Azusa, Baldwin Park, Bradbury, Claremont, Covina, Diamond Bar, Duarte, El Monte, Glendora, Industry, Irwindale, La Puente, Laverne, Monrovia, Monterey Park, Pasadena, Pomona, Rosemead, San Dimas, San Gabriel, San Marino, Sierra Madre, South El Monte, Temple City, Walnut, West Covina
South Bay Cities Association City of Los Angeles, Carson, El Segundo, Gardena, Hawthorne, Hermosa Beach, Inglewood, Lawndale, Lomita, Manhattan Beach, Palos Verdes Estates, Rancho Palo Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Torrance
Westside Cities Los Angeles County, Beverly Hills, Culver City, Santa Monica, West Hollywood
City of Los Angeles Los Angeles County, City of Los Angeles
Ventura Council of Governments Ventura County, Agoura Hills, Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, San Buena Ventura, Santa Clarita, Santa Paula, Simi Valley, Thousand Oaks, Westlake Village
Arroyo Verdugo Burbank, Glendale, La Canada Flintridge, Pasadena, South Pasadena
North Los Angeles County County of Los Angeles, Lancaster, Palmdale, Santa Clarita,

SCAG PLANNING SUBREGIONS 1993 RME DRAFT



LEGEND

IVAG	San Gabriel Valley	Orange Co	VCOG
Arroyo Verdugo	South Bay Cities	CVAG	
LA City	SELAC	WRCOG	
North Co	West Side Summit	SANBAG	

Major issues confronting the RME include:

- A projected \$5 billion shortfall over the 2010 planning period.
- Extensive concern that even if funding questions are resolved, federally mandated air quality standards will not be reached without aggressive use of advanced technologies and new market incentives.

EXECUTIVE SUMMARY: GOALS, OBJECTIVES, STRATEGIES AND FINANCE

INTRODUCTION

The RME provides a flexible framework for the discussion and resolution of transportation planning issues expected to confront the SCAG region through the year 2010.

The economic vitality of Southern California and the individual jobs of millions of workers are dependent on a successful metropolitan transportation system that moves people and goods. This transportation system must be affordable, and must provide for equitable access throughout the region for all people, regardless of income; and for all businesses, both small and large. Furthermore, the metropolitan transportation system must conveniently link neighborhoods to nations, subregions to regions, and everything in between. It needs to serve economic, social, and recreational needs of the region. During the next 20 years, if the transportation system is to successfully move people and goods, the region must develop innovative strategies that build on and maximize huge public investments already spent or committed to highways, rail, bus, airports, seaports, and communications technologies. This system must efficiently combine highways, transit, ports, airports, and the proposed high speed rail along the Coastal and the California High Speed Corridors.¹

Several key factors differentiate the RME from past transportation plans. Foremost, is concern for the economy, and for this reason, the RME treats transportation as a powerful job creation engine and as a tool to reduce transportation costs. Another major change impacting the RME is SCAG's decision-making structure, which now involves more elected representatives from a more diverse geographic base. The 20 plus member Executive Committee has expanded to a 70-member Regional Council. In addition, as part of the new "bottom-up" decision-making process, 13 subregional groups are formally participating in the development of the regional plan and its subregional parts. Also involved are county transportation commissions, Caltrans, transit operators, air districts, California Air Resources Board, public interest organizations, and citizens at large.

¹ SCRI created and funded the California High Speed Rail Commission. Additional funding for high speed rail is budgeted pursuant to Propositions 108 and 116.

The passage of the federal 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) has brought about a significant number of new RME requirements and added responsibilities for SCAG. Finally, the federal Clean Air Act (CAA), California Clean Air Act (CCAA), and Lewis-Presley Air Quality Management Act present additional requirements that the RME must consider, including specific performance targets and plan conformity.

RCP AND RME GOALS

The RME must address specific mandated state and federal issues. But in terms of outreach, public comment, and review by SCAG committees, the goal selection process is the same for both the RME and the RCP. For this reason, the locally developed goals for both documents are almost identical in content. Actual language is slightly different as is to be expected. Table 2-1 briefly lists the RME goals and how they compare with the RCP goals. Table 2-2 represents the efforts of the public, professional planners, subregions, government agencies, and SCAG's committees to refine and detail exactly what the RME goals mean to the SCAG region.

TABLE 2-1
RCP AND RME GOALS

RCP	RME
	• Sustain Mobility (Overall Goal Consistent With 5 Subgoals)
• Raise Standard of Living	○ Foster Economic Vitality
• Healthy and Environmentally Sound Quality of Life	○ Enhance the Environment
	○ Reduce Energy Consumption
	○ Promote Transportation-Friendly Development Patterns
• Equity	○ Promote Fair and Equitable Access

**TABLE 2-2
RME GOALS AND SUBGOALS**

SUSTAIN MOBILITY

- Sustain or better the 1990 levels of service for the movement of people and goods.
- Ensure that transportation investment provides for the greatest possible mobility benefit.
- Serve the transportation needs of everyone including the elderly, handicapped, disadvantaged and transit-dependent.
- Develop regional transportation solutions that complement subregional transportation systems and serve the needs of cities and communities

RME SUBGOALS

Foster Economic Vitality	Enhance the Environment	Reduce Energy Consumption	Promote Transportation-Friendly Development	Promote Fair and Equitable Access
<ul style="list-style-type: none"> • Promote transportation strategies that support and encourage economic vitality within the region, and assist in developing the Southern California economic base. 	<ul style="list-style-type: none"> • Support transportation strategies that minimize impacts on the environment. 	<ul style="list-style-type: none"> • Support transportation strategies and investment that decrease the region's dependence on traditional fossil fuels. 	<ul style="list-style-type: none"> • Encourage land-use development patterns that complement transportation investments. 	<ul style="list-style-type: none"> • Improve access to the regional rail and bus transit and high occupancy vehicle systems for subregions, cities, and neighborhoods as well as households of different incomes, race, and ethnicity.
<ul style="list-style-type: none"> • Promote transportation strategies that reduce public and private costs, and enhance the region's competitive position. 	<ul style="list-style-type: none"> • Support transportation policies and actions to meet state and federal air quality goals and objectives. 	<ul style="list-style-type: none"> • Support the development of alternative fuels technologies for region's vehicles. 	<ul style="list-style-type: none"> • Foster land-use decisions that encourage alternatives to the auto. 	<ul style="list-style-type: none"> • Improve access to effective goods movement for households and businesses in different parts of the region.
<ul style="list-style-type: none"> • Support transportation activities that encourage production of goods and services for local consumption as well as for export to other regions. 	<ul style="list-style-type: none"> • Support new technologies that improve air quality, mobility, and the economy. 	<ul style="list-style-type: none"> • Encourage non-motorized trips. 	<ul style="list-style-type: none"> • Promote telecommuting infrastructure and work policies. 	<ul style="list-style-type: none"> • Improve access to existing and new communications technology for transportation systems, transportation vehicles, households, and work places in different parts of the region.
<ul style="list-style-type: none"> • Ensure that the region receives the maximum amount of federal, state, and private transportation funding and the employment these funds bring with them. 			<ul style="list-style-type: none"> • Promote 3rd tier transit, smart shuttles including shared taxis, jitneys, dial-a-ride, etc. to act as feeder services to rail transit and to link transit centers and activity areas. 	<ul style="list-style-type: none"> • Promote policies and procedures that ensure fair and mutually supportive decisions for allocating public and private funds for transportation in different parts of the region.

OBJECTIVES (PERFORMANCE TARGETS) AND CONFORMITY

Federal and state statutes contain mandated performance targets that are used to measure the effectiveness of the RME and air quality plans for air basins in the SCAG region (See Table 2-3 for the performance targets).

In addition to objectives required by law, as a matter of policy, the RME proposes a performance target range of a 10 to 14 percent transit mode split for Home to Work trips for the year 2010.

Finally, both the RME and the RTIP, which is based on the RME, must meet a federal conformity test. Under this federal requirement, SCAG must evaluate all transportation projects proposed in the RTIP and make a finding that the projects are consistent and in conformance with the State Implementation Plan (SIP) for the applicable air basin. Projects or activities that do not conform may be subject to the withholding of federal funding or permits.² Conformity procedures that reflect the needs of each air basin are being developed pursuant to new federal rules released in November, 1993. A conformity determination on this draft plan must be made prior to the adoption by the Regional Council.

**TABLE 2-3
FEDERAL AND STATE LEGALLY REQUIRED OBJECTIVES
(PERFORMANCE TARGETS):
MOBILITY AND AIR QUALITY**

Federal Requirements
<ul style="list-style-type: none"> • Contribute to an increase in peak-period Average Vehicle Ridership (AVR) by large employers with 100 or more employees. — 42 U.S.C. §7511a(d)(1)(B) • Offset with Transportation Control Measures (TCMs) the growth of emissions due to an increase in vehicle trips and Vehicle Miles Traveled (VMT). — U.S.C. §7511a(d)(1) • Meet emission budget requirements for mobile sources as determined by final State Implementation Plan/Federal Implementation Plan.
State Requirements
<ul style="list-style-type: none"> • Achieve an average vehicle occupancy of 1.5 persons per vehicle during commuter peak period hours by 1999 in severe and extreme non-attainment areas. — Cal. Health and Safety Code 40920(a)(2) • Achieve a substantial decrease in the growth of passenger vehicle trips and VMT in serious, severe, and extreme non-attainment areas. — Cal. Health and Safety Code 40919(a)(3) • California Air Resources Board recommends that air districts "... design plans that reduce VMT and trips growth rates to the maximum degree feasible, and which, at a minimum, decrease growth of VMT and trips to the rate of population or household growth."³ • Allow no net increase in mobile source emissions after 1997 in severe and extreme non-attainment areas. — Cal. Health and Safety Code 40920(a)(2) • Meet emission budget requirements for mobile sources as determined by final State Implementation Plan/Federal Implementation Plan.

² 42 U.S.C. §7506(c)., 43 U.S.C. §176(3)(c).

³ CARB California Clean Air Act Transportation Guidance, *Transportation Standards*, May 1991, Page 3.

REGIONAL MOBILITY STRATEGY

There are no magic bullets or easy strategies that the region may employ to achieve the RME goals for mobility or the equally important environmental and economic improvements called for in the RME's subgoals (*See* Figure 2-1, 1990 E&F Levels of Service). There are, however, very serious federal and state mandates that require the region to meet these goals or face severe sanctions. And, despite impressive rail system improvements and other transportation investments that will cost additional billions of dollars to implement, the region, according to SCAG's computer modeling projections, may not meet all its mandated mobility and air quality requirements for 2010.

The RME has modeled five scenarios for 2010 based on a mix of transportation strategies or approaches. (*See* Table 2-5, Mix Of Strategies and Table 2-6, RME Alternatives Compared for Performance). Unfortunately, none of the modeled scenarios meets all the federal and state mobility/air quality requirements for 2010 (Socioeconomic and modeling parameters are illustrated in appendix I).

The Regional Council, with input from the public must review scenarios and strategy mixes, then select a transportation scenario for the region. The selection of a scenario and strategy mix will need to satisfy multiple requirements contained in federal and state transportation laws and federal and state environmental laws. Two primary forces will be the financial constraints (*See* financial section, RME Chapter 10) and "emission budget" requirements found in these laws (*See* Table 2-4, Comparison of 2010 Emission Goals to RME Alternatives' Emissions).

The mobility element must be within an "emissions budget" for the respective air basin plans. These budgets have not been set yet and are only finalized when the Environmental Protection Agency (EPA) approves an air plan for each applicable air basin. Table 2-4 also presents data for the South Coast and Ventura County from the workshops on the impending Federal Implementation Plans (FIP) for these two air basins and the alternatives this plan is considering. None of the alternatives, by themselves, achieve the level of emissions envisioned in the federal plans. Nor do they achieve the same level of emissions called for in the 89/91 plan for the South Coast Basin.

The following is a discussion of two of the alternative scenarios which appear to present the best approach to meeting the requirements the region has: The Constrained Project and an "Innovative Project Series." The latter presents additive programs that would allow the region to increase transit ridership and to provide additional incentives to reduce vehicle miles traveled and/or reduce emissions from on-road vehicles.

1990 E&F LEVELS OF SERVICE

1993 RME DRAFT



Source: CALTRANS



FIG. 2-1 10/15/93

The issue is how the region wants to adjust its transportation behavior and investments as it balances the constraints of money, environmental objectives and mobility choices. The final plan must be within financial and emission budget limits.

TABLE 2-4
COMPARISON OF 2010 EMISSION GOALS TO RME
ALTERNATIVES' EMISSIONS

Preliminary FIP data for on-road vehicles (estimated emissions budget for attainment).	VOC	NO _x	CO
South Coast Air Basin	41**	96**	387*
Ventura County	11**	9**	N/A
Current Local Plans	96	216	1559
Constrained Project	94	213	1526
Innovative Series	Depends on mix of strategies		

* Estimated from the 1991 Air Quality Management Plan

** Based on EPA FIP data for passenger vehicles; does not provide full credit for ARB end of tailpipe controls.

Note: For illustration-actual emission budgets will change depending on the final emission reduction strategy

TABLE 2-5
MIX OF STRATEGIES

Computer modeled scenarios for meeting the transportation goals and requirement of 2010 are made up of the following "mix of strategies":
• Facilities (mixed-flow freeway and highways, High-Occupancy-Vehicle freeway and arterial lanes, and transit).
• Transportation System Management (ramp metering, signal improvement).
• Transportation Demand Management (employer based trip reduction, telecommunications, promotion of walking and cycling).
• Urban Form (integrated design of land use and transportation projects; growth management, job/housing balance policy).
• Technology (Mobility: "smart streets" with equipment to adjust intersection signals based on the volume of traffic. Air Quality: low and zero emission vehicles).
• Market Incentives/Pricing (parking fees, toll roads, congestion pricing).

Table 2-6

RME ALTERNATIVES COMPARED FOR PERFORMANCE

PROJECT ALTERNATIVES

PERFORMANCE INDICATORS	1990 (Ref. Point)	BASELINE 1	CURRENT LOCAL PLANS	CONSTRAINED PROJECT	INNOVATIVE SERIES			OBJECTIVES (Perform. Targets) (LEGAL)* (POLICY)**
					BASIC	TECHNOLOGY	PRICING/ MARKET INCENTIVE	
+ MAJOR CHANGE IN STRATEGIC POLICES		+ RTIP93-99 (No Build) & 40% Population Increase	+ Facilities: - Hwy/HOV - Transit	+ TDM (HBW) - Transit/ Rideshare - Tier 3 Transit Shuttles (Rail & Transit Sta.)	+ More Transit/HOV TDM: - Pricing Non- Work Trips. - More Telcom More Technology - Transportation System More Tier 3 Transit Shuttles (Centers)	+ Most Technology - More Advanced Traffic Mgmt. Sys. - More Advanced Transp. Tech. Most Tier 3 Transit - Most Work Sites - Non-Work Sites More Clean Vehicles	+ Most Pricing - Parking - Employee & Consumer - Congestion Fees - Emissions Fees - Gross Polluter Fees Revenue from Fees to Improve Transp.	
FUNDING POLICY	Existing \$	Existing \$	Existing \$	Reasonably Available \$	Reasonably Available \$ + Recom. Innovative \$	Reasonably Available \$ + Recom. Innovative \$	Reasonably Available \$ + Recom. Innovative \$	Reasonably Available \$ + Recom. Innovative \$
Ave. Daily Speed* (All Trips)	31.8	20.7	26.4	27.5	28.5			
Daily Vehicle Trips (All Trips)	Trips In Millions	34.3	45.1	44.8	44.3	43.4		Limited to 2% Popu- lation Growth Rate*
	Growth Rate Per Year		1.59%	1.53%	1.46%	1.33%		
Daily VMT (All Trips)	VMT In Millions	283.8	432.4	418.8	412.9	401.5	12% VMT Reduction (EDF Study) ^d	Limited to 2% Popu- lation Growth Rate*
	Growth Rate Per Year		2.62%	2.38%	2.27%	2.07%		
TRANSIT (HBW)	5.6% HBW	7.1% HBW	8.7% HBW	11.8% HBW	12.6% HBW	20% HBW Transit [Est. by U.I.G. ^c Study]		10-14% **
AVR (All Trips)	1.42	1.44	1.45	1.46	1.49			1.5 AVR * by 1999
ROG ^b 2010	483	109	96	94	91	89 ^f	84 ^f	No Net Increase After 1997* ^g
NO_x ^b 2010	456	225	216	213	210	215 ^f	206 ^f	
CO ^b 2010	3957	1779	1559	1526	1479	1462 ^f	1372 ^f	

CONSTRAINED PROJECT

For the purposes of the RME, the Constrained Project consists of projects and programs that are either being implemented today, or have been budgeted⁴ and will be built or underway before 2010 (See Figures 2-2 to 2-5). Local commitment to long term or "reasonably available" funding is a major new test now imposed on mobility planning under federal ISTEA regulations (See Table 2-7 Reasonably Available Funding Criteria; Project Inclusion Criteria are illustrated in Appendix J).

The Constrained Project also includes the following:

- An expanded parking cash out program that is expected to have a positive impact on mobility and air quality.
- Improved local feeder system consisting of shared taxis, jitneys, and shuttles to support line haul rail by making rail transit more accessible.

In this Draft RME, the Constrained Project comes close but does not meet the requirement of reasonably available funding — an issue that must be resolved prior to final RME adoption in the first quarter of 1994. Of equal concern, based on SGAG's computer modeling, the alternative's proposed system improvements provide at best a 1.46 Average Vehicle Ridership (AVR), which does not meet the state required 1.5 AVR for all peak period trips by the year 2010. There are other state and federal mandates that are not met by this constrained alternative.

Failure to meet federal mobility and air quality mandates could subject the RME to possible EPA sanctions or lawsuits that could freeze federal funding for the region.

TABLE 2-7
REASONABLY AVAILABLE FUNDING CRITERIA

- | |
|---|
| <ul style="list-style-type: none"> • Has the proposed implementing agency (local, regional, state or federal government or private organization) taken a formal action by the time of Plan adoption to authorize the funding source? • Is there a historical trend that resources of this type are usually approved by the public or their representatives? • Have private sector organizations (such as the Chamber of Commerce, trade organizations, businesses, private task forces, etc.) shown support (e.g. policy, action, education) for the proposed funding mechanism? • Has the state or federal government taken action required as a prerequisite or condition for enabling the resource by the time of Plan adoption? |
|---|

<p>To be considered "reasonably available," each of the criteria must be answered YES or NOT APPLICABLE. Criteria will be interpreted broadly. The specific funding source, along with the analysis, will be brought forward through the SCAG committee process for discussion and approval.⁵</p>
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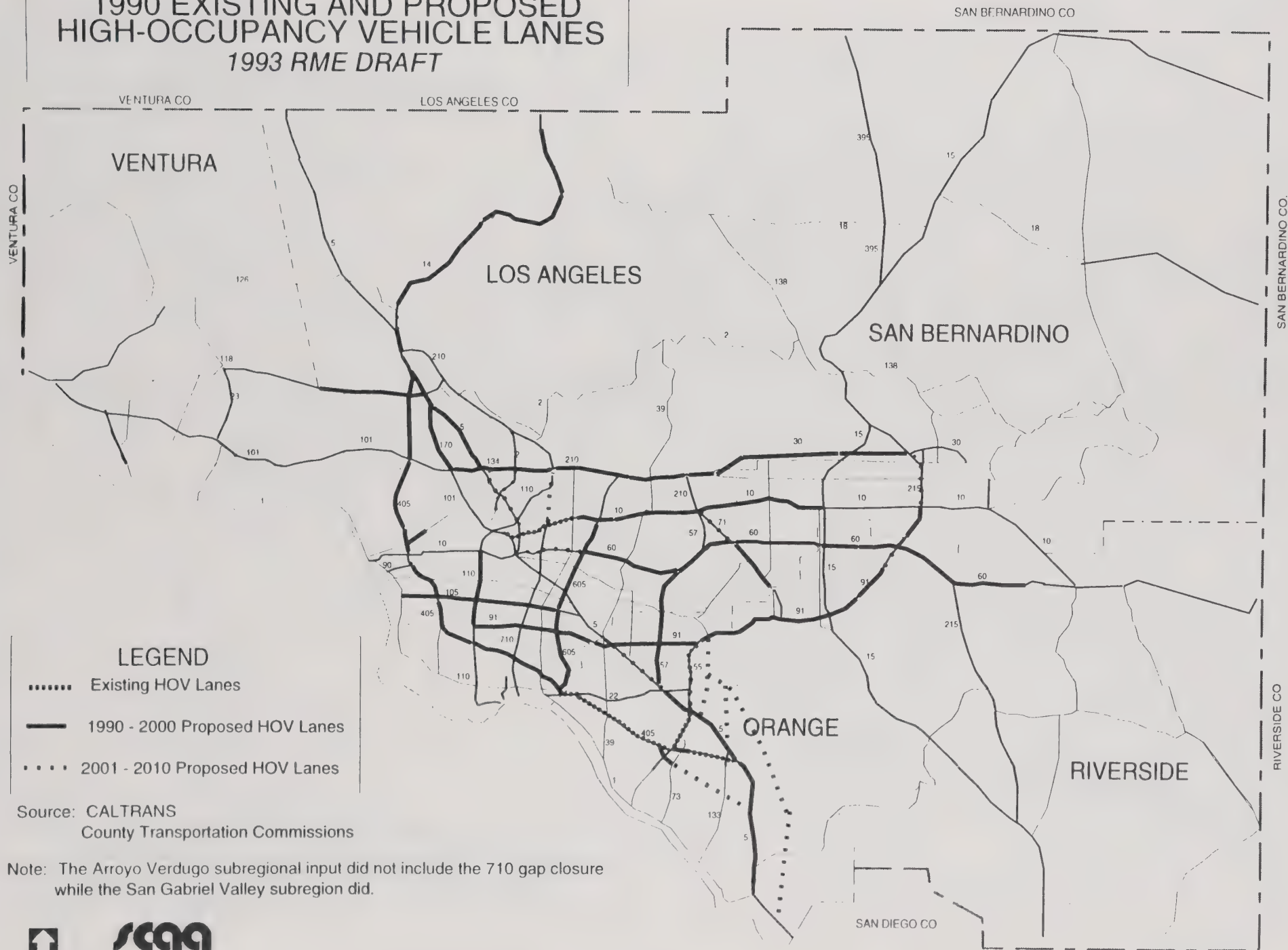
⁴ Funded pursuant to 1993-1999 RTIP updated July 1993

⁵ Funding criteria approved August 1993 by SCAG Transportation and Communications Committee.

[illegible]

Page 2-10

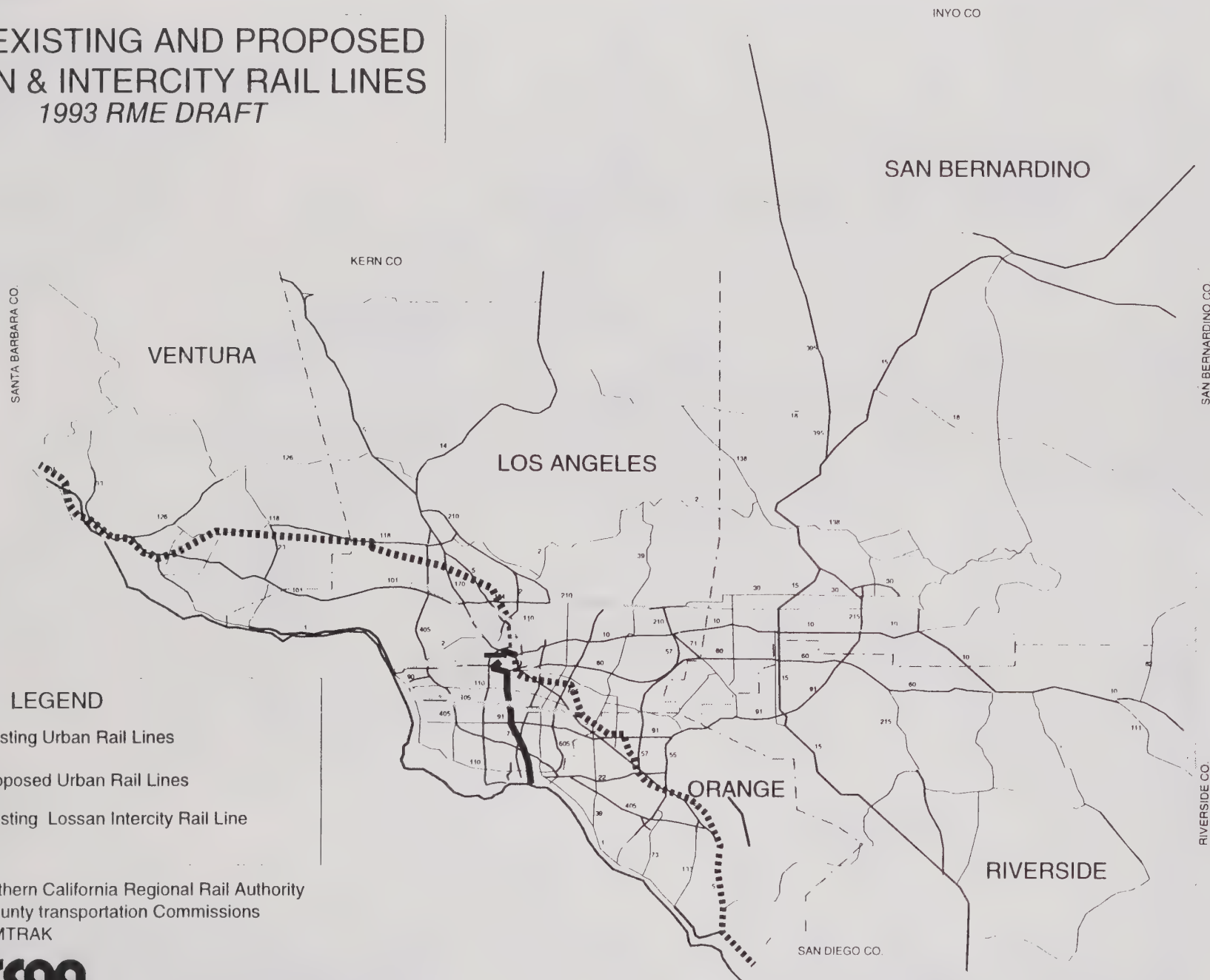
1990 EXISTING AND PROPOSED HIGH-OCCUPANCY VEHICLE LANES 1993 RME DRAFT



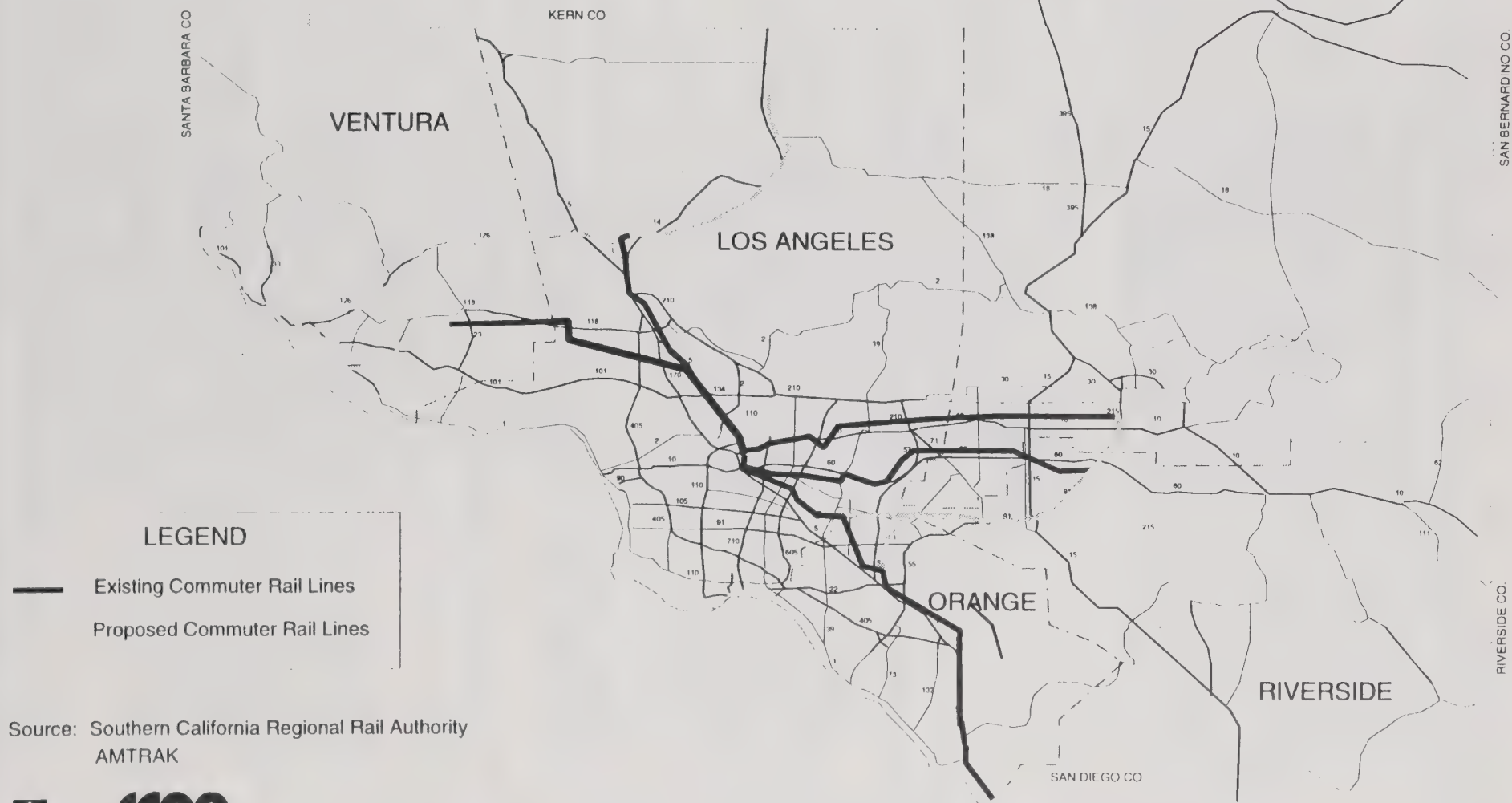
1993 EXISTING AND PROPOSED URBAN & INTERCITY RAIL LINES 1993 RME DRAFT

- LEGEND**
- Existing Urban Rail Lines
 - - - Proposed Urban Rail Lines
 - Existing Lossan Intercity Rail Line

Source: Southern California Regional Rail Authority
County transportation Commissions
AMTRAK



1993 EXISTING AND PROPOSED COMMUTER RAIL LINES *1993 RME DRAFT*



INNOVATIVE PROJECT SERIES

To better meet air quality and mobility requirements and avoid federal sanctions, the RME also proposes an alternative to the Constrained Project, featuring a mix of strategies or innovative steps. This alternative is referred to as the "Innovative Project Series." More than a stand-alone alternative project, the Innovative Project Series focuses on advanced technology and pricing options that may be implemented in either a limited or aggressive fashion. The public and regional decision-makers will be able to weigh and adopt all, parts, or various strategy mixes, that make up the Innovative Project Series.

The Innovative Project Series builds on the Constrained Project by prudently expanding projects and programs using reasonably available funds plus innovative public and private funding sources. (Under ISTEA, projected revenue sources, beyond those already identified in the Constrained Project may be used to fund the Innovative Project Series, provided specific strategies are identified to ensure availability of projected revenues). The Innovative Project Series, in its basic configuration generates a 1.49 AVR and of all the alternatives comes the closest to meeting the state required 1.5 AVR for all peak period trips. Using advanced technology or market pricing or some combination of both strategies, the Innovative Project Series presents decision-makers with perhaps the only opportunity to meet mobility and air quality requirements for 2010.

The "basic" core of the Innovative Project Series calls for:

- Additional Metrolink service including improved headways and reverse commute runs.
- Additional express bus service, particularly in Orange County.
- Signal system improvements resulting in bus priority on key arterials in Los Angeles County.
- Additional HOV lanes on the 118 and 23 freeways in Ventura County and the 101 Freeway in Los Angeles County.
- Trip reductions from increases in telecommuting and from expansion of walking and non-motorized trips.
- Intelligent Vehicle Highway Systems (IVHS)/Advanced Transportation Management System (ATMS) technologies are planned to increase freeway capacity by 10 percent and arterial capacity by 5 percent.
- Limited pricing strategy, based on increased parking charges produces a 1.5 AVR for all peak period commute trips.

The basic core also significantly expands shared taxis, shuttles and jitneys to serve all major activity centers. This builds on the feeder service to line haul transit centers already called out in the Constrained Project. This expansion of the "third tier" of transit is proposed because the constrained project is focusing mostly on tiers

one and two of transit systems. Tier one is the longer distance line haul service like Metrolink, some express bus services and other longer distance rail services. The second tier is the support bus and paratransit service that provides service to connect to the tier one service or medium distance services and can connect communities. The third tier is localized, short trip service that is more community oriented. This can also provide service to the local rail station. The average trip length on the current transit system is about four miles. The average trip length in the region is currently eight miles (See Table 2-8, Three-tier Transit System Expansion, for a full discussion on use of shared taxis, jitneys, and advanced technology smart shuttles).

TABLE 2-8
THIRD-TIER TRANSIT SYSTEM EXPANSION

Third-tier Transit System Expansion
<ul style="list-style-type: none"> • The "Third-tier Transit"⁶ concept was analyzed by the Urban Innovations Group (UIG) in connection with a SCAG funded analysis entitled "Regional Urban Form Study". The study suggests that land use strategies that call for concentrating growth at transit stations will by themselves not meet regional air and mobility goals. According to UIG, concentrating growth at rail stations will increase the modal split for transit in the home-to-work market above the trendline projections, but may result in localized congestion that offsets advances in mobility and air quality. SCAG's own computer modeling under the Urban Form Alternative substantially corroborates the UIG observations. The UIG study then premises and models a multi-tiered, flexible response transportation system that maximizes and supports current and planned rail transit projects. This model generates a modal split that falls in the 15-25% range. • The Innovative Project Series, features a range of third-tier transit services starting with shared taxis, shuttles, jitneys and progressing to advanced technology "zero emission smart shuttles" that can be computer routed for short speedy trips. This would augment local services already being provided. • Concept takes advantage of fact that most trips average eight miles. Small vehicles are well suited to the short trip market and the hard to serve medium trip market. • It is envisioned that the smart shuttle would be primarily privately operated under public policy management and oversight. • Concept builds on and accrues the advantages of urban form strategies which reduce motorized trips by placing goods, services, and other activities all within a short walking trip of home and work. • Concept has numerous potential benefits including modal shifts in the non-home-to-work travel market; reduced public expenditures because third tier transit is all or partially privately financed; and sustainable employment and economic development opportunities. Long-term jobs will be created in regional manufacturing of shuttles as well as in entry and mid level work opportunities in driving, operations and maintenance. Overall, Third-tier transit could become part of a sustainable regional manufacturing base producing high tech products for both local consumption and global export.

⁶ Regional Urban Form Study, Urban Innovations Group, August 9, 1993

Innovative Project Series - Aggressive Use of Advanced

Technology: According to Urban Innovations Group (UIG) modeling analysis, adding computerized or smart shuttles to the strategy mix for the Innovative Project Series would maximize the third-tier of the system already specified in the base core of this alternative. Such a responsive, extensive transit service would provide a home-to-work modal split in the 15 percent to 25 percent range.

Aggressive implementation of all three tiers of the Transit system beyond the level in the basic innovative option would allow the region to meet state and federal mobility and air quality mandates. This probably cannot be achieved with the present financial resources available to the region and/or current investments being made on transportation.

The operating assistance to maintain and operate the existing and planned system is rapidly using up the region's financial flexibility.

The SCAG advanced Transportation Technology Task Force is developing specific recommendations in the utilization of this concept and will make recommendations to the Regional Council for plan adoption.

Innovative Project Series - Aggressive use of Market

Incentives/Pricing Mechanisms: Year 2010 VMT reductions of almost 12 percent over baseline have been modeled by the Environmental Defense Fund (EDF) for the Southern California region using an aggressive package of market incentives.⁷ A similarly modeled package of innovative market incentives for the San Francisco Bay area also produced 12 percent reductions in VMT for the same time period⁸. SCAG sensitivity runs, which considered pricing assumptions for auto operations, transit, and parking that were similar, though distinctly different to those used in the EDF and San Francisco studies, reported significant improvements in mode splits.

However, the SCAG model runs for market incentives' most dramatic finding was that when proceeds from market incentives are re-invested in transportation service enhancements such as reduced headways, the mobility indicators are more than doubled. Or to put it another way, the same transportation improvements can be obtained with considerably less costly pricing mechanisms if income is reinvested in service improvements. (See Table 2-9, Market Incentives/Pricing Mechanisms).

⁷ Transportation Efficiency: Tackling Southern California's Air Pollution and Congestion, Michael Cameron, March 1991, Environmental Defense Fund, Regional Institute of Southern California.

⁸ Harvey, Greig, Pricing and Travel Behavior, June 15, 1993.

Aggressive implementation of a market incentive program would allow the region to meet state and federal mobility and air quality mandates.

Long-term Market Incentives/Pricing Mechanisms strategies currently being examined under the Innovative Project Series include accelerated parking cash out, peak-hour congestion pricing, emissions charges for gross polluters, and emissions fees based on emissions per mile. The Market Incentives Task Force will make specific recommendations on the use of market incentives to the Regional Council for inclusion in the adopted plan.

TABLE 2-9
MARKET INCENTIVES/PRICING MECHANISMS

ENVIRONMENTAL DEFENSE FUND/RISC STUDY MARCH 1991		SCAG SENSITIVITY RUN, PACKAGE 5, 1993 DISCUSSION DOCUMENT	BAY AREA PRICING STUDY JUNE 15, 1993
Strategy	Pricing Level	Pricing Level	Pricing Level
Regional Congestion Pricing	\$3.00/day/vehicle		\$0.10 per mile
Regional Employee Parking Charge	\$2.25/day/vehicle	\$3.00 per day minimum or current levels if higher 10 minute Bus Service (transit = \$½)	\$3.00 per day minimum & higher where already higher (free transit)
Regional Non- Employee Parking Charge	\$0.30/day	Arterial HOV Lanes \$0.60 per hour	\$ 0.01 per minute (\$3.00 per day maximum)
VMT/Smog- Based Registration Fee	\$110/year	\$0.05 per mile	average \$125 per vehicle
Gasoline Tax Increase		\$1.00 per gallon	\$2.00 per gallon

ENVIRONMENTAL DEFENSE FUND/RISC STUDY MARCH 1991		SCAG SENSITIVITY RUN, PACKAGE 5, 1993 DISCUSSION DOCUMENT	BAY AREA PRICING STUDY JUNE 15, 1993
Strategy	Pricing Level	Pricing Level	Pricing Level
Net Impacts	12 % ↓ in VMT	Vehicle Trips (VT) Reduced • 10% ↓ for Home-to- Work • 9.5% ↓ for Non- Home-to-Work	1987 • 14.8% ↓ in VMT • 15.9% ↓ in VTrips <hr/> 2010 • 11.6% ↓ in VMT • 12.0% ↓ in VTrips
Note: Modeling methodologies, assumptions, and 2010 population projections vary greatly from one study to another.			

LISTING OF ALL MODELED ALTERNATIVES

1989 RMP Adopted Plan (No Project For The EIR): Though it would not meet current funding requirements, this alternative until revised or replaced continues as the adopted plan for mobility for the SCAG region and the adopted TCM in the 1991 air plan for the SCAB.

This alternative reflects the impacts of new (higher) socioeconomic data forecasts, with the assumption of a distribution representing jobs/housing balance. Some of the projects and programs can be funded (constrained) and some cannot (unconstrained).

Baseline #1: This scenario represents the "No-Build" Project, as it includes only those transportation improvements currently under construction or fully environmentally cleared, but includes no mixed-flow highway improvements per an agreement with SCAG and the California Air Resources Board (ARB) in the board's conditional approval of the 1991 Air Quality Plan for the SCAB. Projects and programs currently programmed for implementation by the year 2010 by the County Transportation Commissions and Caltrans, as of July, 1993, are included in this scenario. The alternative is based on existing funding, which is within the criteria for reasonably available funding.

Current Local Plans: Projects and programs currently programmed for implementation by the year 2010 by the County Transportation Commission and Caltrans, as of July 1993, are included in this

scenario. The alternative is based on existing funding, which is within the criteria for reasonably available funding.

Constrained Project (The RME Project For The EIR): This scenario is similar to Current Local Plans, in terms of the physical improvements included, but includes minor policy changes aimed at encouraging alternative modes of transportation, such as Katz parking cash-out program and the federal energy act. It includes only those programs that are likely to be fundable based on reasonably available funding.

Innovative Project Series: This scenario builds upon the Current Local Plans and the Constrained Project by adding a prudent number of improvements, based on reasonably available funds plus innovative funding sources, and emphasis on pricing strategies and technology to achieve the 1.5 AVR objective for all peak period trips. Also included are optional advanced technology and market incentives/pricing mechanisms which may be added to the basic core of this alternative.

Urban Form Alternative: This scenario looks at the impact of a revised land use distribution with the transportation improvements included in the Current Local Plans alternative. The urban form distribution included in this model run concentrated higher density development around rail stations.

REGIONAL AVIATION SYSTEM PROGRAM SUMMARY (RME CHAPTER EIGHT)

The SCAG region contains the largest system of airports in the world. There are 56 public-use civilian airports and 10 other military air installations, two of which have been marked for closure by the Department of Defense and one that will be realigned and downsized. One other military airbase is under study for military/civilian joint-use.

In 1991, the region's commercial airport system served 61.8 million annual passengers and 1.5 million tons of air cargo. Most of this demand was served by five urban-area commercial airports. These airports include Los Angeles International, Ontario International, John Wayne, Burbank-Glendale-Pasadena, and Long Beach. Other commercial service airports serving the region include Oxnard, William J. Fox, Palmdale, Palm Springs and Imperial County.

While the SCAG region is first in aviation activity compared to any other region in the world, it has been beset by an expected shortfall in commercial airport capacity after the year 2000. This shortfall was expected because existing commercial airports were limited below physical capacity due to policy constraints resulting from

environmental impacts. A strategy was followed to increase capacity by identifying new airport sites, or modal substitutes such as high-speed rail. These efforts were successful in identifying potential new airport sites, but unsuccessful in finding sites that were technically feasible and acceptable to local communities. In light of the announced military airbases closures, airport capacity shortfall may be significantly mitigated.

The currently emerging strategy is for the military airbases and a site in the Long Beach Harbor to compete for market share. An evaluation of the potential market share of each airbase is currently being conducted by SCAG.

Commercial airport ground access is another major concern. As airports reach their physical capacity, access infrastructure will become increasingly congested. While additional facilities may be needed, these must be balanced with inter-modal and multi-modal access strategies. Ground transportation modeling and analysis will be conducted for all five urban-area commercial airports to achieve the latter.

The general aviation system is under increasing budgetary pressures as local governments experience the effects of recession. This is occurring during a period when the roles of general aviation airports are changing from recreational uses to more support for business, government uses and emergency response. A study of these trends is underway.

Another major concern is the strategic role of the aviation system in contributing to the economic recovery of the region and future economic development, particularly in relation to international trade. New international relationships, new technology, and new aviation capabilities need to be assessed to determine the best direction for the region.

REGIONAL GOODS MOVEMENT PROGRAM SUMMARY (RME CHAPTER SEVEN)

Goods movement in the SCAG region is critically linked to the local economy and has significant impact on mobility, the environment, quality of life, and land use. Foreign trade makes up a major part of regional goods movement and has emerged as a major sector in the region's economic base.

The volume of merchandise traded through the Los Angeles Customs District has grown from \$6.2 billion in 1972 to \$121.8 billion in 1992. Total trade, imports and exports combined, on the region's rail and highway systems has increased by 16 percent per year.

In terms of employment, the U.S. Department of Commerce computes that for every additional \$1 billion of U.S. exports, 19,000 jobs are created through:

- Increased demand for manufactured goods.
- Increased goods delivery which supports thousands of jobs in the trucking, wholesale trade, railroad, shipping and air cargo industries
- Increased service support for business travelers which means more jobs in the hotel, travel, and restaurant industries.

Few improvements to the region can have as great and beneficial impact as enhancement of goods movement. Clearly such improvements help the region sustain mobility which is the principal goal of the RME. Equally importantly, betterment of the goods movement system helps raise the standard of living for a significant portion of the region's work force.

Creating more jobs and increasing regional commerce hinges on efforts to make goods movement more competitive and yet still meet new federal and state air quality requirements that have been mandated for the region. This is one of the thorniest and most serious dilemmas facing the region today. However, as discussed more extensively in the economic chapter of the RCP; from an historical perspective, nations and regions have actually become more competitive by successfully learning to resolve conflicting interests. (See Chapter Two, The Economy, in the Draft RCP.)

Major goods movement facilities in the SCAG region include the ports of Hueneme, Long Beach, and Los Angeles; airport operations at Burbank, John Wayne, Long Beach, Los Angeles, and Ontario; and a system of railroads, freeways, highways, and arterial truck routes.

Issues confronting the efficient movement of goods are the following:

- **System Improvements:** Development, operation and maintenance of the region's significant existing and proposed freight movement facilities are essential to revitalizing the Southern California economy. Key improvements are the following:
 - Completion of the Alameda Corridor is essential to the region's fight to stay competitive in the world market. Three quarters of a million jobs and the loss of port business to seaports in Ensenada; Mexico, and Tacoma, Washington are tied to the successful funding and approval of the Alameda Project.

- Extension of improved highway access to the Port of Hueneme in Ventura County is also critical to the efficient and cost effective movement of goods within the SCAG region as well as in out of the SCAG region to other international markets.
- Study of freight rail corridor consolidation east towards Barstow in San Bernardino County to evaluate the long term efficient movement of goods.
- Completion of the new Calexico East Port of Entry and final resolution of connection issues has taken on a new sense of urgency with the approval by Congress of the North American Free Trade Agreement (NAFTA).
- **Energy:** The common thread that runs through all aspects of goods movement from air quality issues to cost of operations is "energy". A fix of one energy-related problem frequently adds or creates problems elsewhere. For example, the search for cleaner emissions can drive up operating costs to cover use of more expensive clean fuels.
- **Safety:** Freight accidents and incidents on the region's roadways drive up cost of goods and reduce mobility for all other users of highway/freeway systems.
- **Mode:** System inefficiencies and mode conflicts drive up costs and reduce the region's competitiveness. The Alameda Corridor improvements are designed to increase the region's businesses competitiveness by removing bottlenecks in the ship to truck/train network.
- **Truck & Rail:** Truck and rail move goods to and from the SCAG region and are responsible almost exclusively for delivery to wholesale, retail, and industrial sites. Trade-offs between the two that will be required to meet the regions' goals and mandates for mobility, air quality, and standard of living must consider the totality of the truck and rail systems.
- **Urban Form:** Land-use designs and infrastructure development do not adequately accommodate the needs of goods movement. Off-Peak-hour truck use of highways and streets can improve mobility overall, reduce the cost of doing business, and increase competitiveness. However, off peak hour deliveries may require early morning or late evening shipping to retail outlets which are frequently surrounded by residential neighborhoods. To be accepted by the public, deliveries during non-traditional hours must be made to on site shipping docks that are designed to shelter and insulate surrounding residences from noise and light.

TRANSPORTATION CONTROL MEASURES SUMMARY (RME CHAPTER ELEVEN)

Transportation Control Measures (TCMs) are strategies designed to reduce the amount of motor-vehicle based emissions by changing the way people make trips, by alleviating traffic congestion, and by facilitating infrastructure changes to promote alternatives to single-occupant vehicles.

Strategies and requirements for TCMs used to meet air quality requirements differ for each of the region's six non-attainment areas. However, maximum use of reasonably available TCMs in conjunction with all other strategies (stationary and area) is mandated by law.⁹ (See Table 2-10 for federal and state TCM requirements.)

TABLE 2-10
FEDERAL AND STATE TRANSPORTATION CONTROL
MEASURES REQUIREMENTS

FEDERAL	STATE
108(f) list of TCMs	Implement TCMs considered reasonably available
TCMs must be: Enforceable Quantifiable Replicable Accountable	AQMP to provide for TCMs
Contribute to an increase in large employer Average Vehicle Ridership	1.5 peak hour Average Vehicle Occupancy by 1999
Offset growth in emissions due to increases in VMT or Vehicle Trips	Substantially reduce the rate of increase in VMT
	Ranked by cost-effectiveness
	Publicly acceptable
	Monitoring procedures for compliance and effectiveness

As part of the air quality plan development process, SCAG is responsible for providing socio-economic data for three air basins:

⁹ Federal Clean Air Act, Lewis-Preseley Act, California Clean Air Act, ISTEA

- The Ventura County portion of the South Central Coast Air Basin.
- Portions of the Southeast Desert Air Basin including Mojave Desert AQMD area, Coachella Valley and Antelope Valley.
- The South Coast Air Basin (SCAB).

In the South Coast Air Basin, SCAG in cooperation with local governments is also responsible by statute for developing and providing TCMs to the SCAQMD for inclusion in the Air Quality Management Plan.

Additionally, SCAG's role is to ensure conformity with the applicable SIP, to monitor and to ensure that the RME and RTIP gives priority to TCMs.

Several SCAG Task Forces made up principally of local government representatives have assisted in providing policy level input into the TCM development process. These committees include the following: Advanced Transportation Technology Task Force; Market Incentives Task Force; Aviation Technical Advisory Committee; Regional Railroad Air Quality Emission Reduction Program; and the joint SCAG/SCAQMD TCM Policy Committee.

While specific recommendations for the South Coast TCMs are still outstanding, initial indications are that the basin's TCM efforts will consist of a comprehensive mobile source emission reduction strategy based on the following:

- **Mobility Improvements:** Closer coordination and integration of air quality and congestion relief measures through the CMP and deficiency plan process are being examined. The impacts of transportation facility improvement are also being addressed.
- **Technology:** Providing innovative technological means to reduce vehicular emissions is likely to be an important cornerstone of the strategy.
- **Market Incentives/Pricing:** Such strategies could be used either to enhance or substitute for TCMs. Market incentives have the potential to also fund needed transportation improvements.
- **Non-vehicular Mobile Source Emission Reductions:** Railroad, airport ground access and goods movement emissions are being re-examined for implementation at the federal, state and regional level.

One of the major issues being debated currently in the SCAB is the structure or mechanism that will be used to implement TCMs. There appears to be three thrusts to this issue: (1) reliance on regional rules (2) pricing, and (3) market/service responsive approaches.

Non-Auto TCMs: In addition to efforts to achieve emission reductions from vehicles, the South Coast Air Basin has also included strategies to reduce emissions from planes and trains. The roles and specific responsibilities of various agencies involved in implementing these TCMs are still being debated.

Regional Railroad Emissions Control Measure: The Railroad Emissions Control Measure from the 1989/91 South Coast Air Plan is being refined for the 1994 Ozone SIP Submittal. This measure is focuses on railroad operations in the South Coast Air Basin, including freight, commuter, and intercity passenger trains. It could have implications on the surrounding air basin as well. The intent is to reduce oxides of nitrogen from diesel-electric locomotives.

Key concerns include: ensuring that adverse modal diversion from trains to trucks does not occur; the development of a comprehensive financing plan; and the provision of a backstop measure.

The decision process for establishing control methods needed to achieve a substantially greater reduction in 2010 emissions is as follows. A Regional Railroad Air Quality Emission Reduction Program has been established, with a Policy Board and five Standing Committees: the Locomotive Propulsion Systems, Finance, Legal, Consolidation, and Freight Movements Committees. In addition, an Emissions Reduction Target Subcommittee will finalize the emissions reduction target for 2010 (currently set at 90%).

The previous Railroad Emissions Measure called for Railroad Electrification. The current form of the measure is technology-neutral, and calls for one or a combination of the following strategies to be used to lower locomotive emissions: clean diesel, SCR, cleaner fuels such as LNG used by gas engines or dual-fuel engines, electrification, and/or new locomotive power plants such as fuel cells.

A series of studies and demonstration projects will be completed by the beginning of 1996, permitting comparisons between alternative control methods, including feasibility and time to commercialization, life-cycle costs, and funding/financial plans required for implementation. The Policy Board will refine the Railroad Emissions Reduction Measure as appropriate, by June 1996.

Aviation Transportation Control Measure: The respective roles and responsibilities of the various agencies involved in implementing aviation Transportation Control Measures (TCM's) are still being

debated. Currently, SCAG is developing ground access plans for all the air carrier airports, the SCAQMD is developing an indirect source rule that will be applied to these airports, and EPA is developing an airport control strategy pursuant to the Federal Implementation Plan (FIP).

The exact division of responsibilities between these agencies in implementing aviation TCM's will be determined in the future.

REGIONAL TRANSPORTATION FINANCING SUMMARY (RME CHAPTER TEN)

Table 2-11 illustrates a regional cost-revenue summary for the facilities in the Constrained Project for the year 2010 of the RME. The revenues fall short of covering costs by 5 billion dollars. At this time the shortfall is a major issue. Most of the shortage is for transit capital and operations. The revenues are based on estimates of federal, state, and local funds that are judged to be reasonably available for various categories of projects.

The revenues and costs were developed through discussions from the county transportation commissions and Caltrans.

SCAG and transportation agency staffs are continuing to review costs and review estimates in order to bring forward proposals for resolving the shortfall issue. A balanced budget is necessary to meet state and federal requirements.

TABLE 2-11
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY (a)
1991 - 2010

PROGRAM	COST	%	REVENUE	NET
Highway Operating	\$6.4	11.8	\$6.3	(\$0.1)
Transit Operating	22.9	42.7	21.0	(1.9)
Regional Streets and Roads	0.7	1.3	1.4	0.7
Highway Capital	10.6	19.6	9.0	(1.6)
Transit Capital	12.7	23.7	9.7	(3.0)

PROGRAM	COST	%	REVENUE	NET
Transportation Demand Management (b)	0.2	0.4	0.7	0.5
Non-motorized Transportation (b)	0.2	0.4	0.4	0.2
TOTAL - ALL PROGRAMS	53.7	100.0	48.5	(5.2)

(a) All dollars are in billions

(b) Preliminary estimates

ISSUES IN NEED OF FURTHER STUDY¹⁰

The RME raises strategy issues that need to be addressed by regional and subregional decision-makers.

MOBILITY AND AIR QUALITY

- How can transportation and air quality requirements for mobility and air quality be met under federal and state law to prevent funding sanctions?

FUNDING SHORTFALL FOR THE RME

- Given current estimates of a five billion dollar shortfall, how will the region pay for facilities and programs that are needed to meet federal and state mobility and air quality requirements? Can more funds that meet the reasonably funded criteria be identified? As an alternative to budget increases, can facilities and programs be prioritized for funding? Can project costs be reduced?

¹⁰ Each chapter of the RME typically concludes a section on "Issues in Need of Further Study" that specifically address problems pertaining to the topic covered in the chapter. Please see also RME chapter twelve, Regional Action Program Summary, for a list of all recommendations suggested in each chapter.

AMENDMENTS PROCESS SUMMARY

Recognizing the need for amendments, SCAG will commit to at least one major amendment, if needed, every two years between plan adoption dates. This includes preparation of the conformity statement. Plan amendments that do not require preparation of a conformity statement may be prepared more frequently. The RTP will be certified periodically as required by state and federal law (*See also Appendix E, Amendments Process*).

INTRODUCTION

As population growth and the resulting traffic congestion increase demands on the transportation system, additional measures will become necessary to meet mobility goals. Moreover, budgetary constraints dictate that the region's mobility needs cannot be met solely by constructing new facilities. The RME places special emphasis on Transportation Demand Management (TDM) in meeting the region's mobility needs. It also recognizes the importance of TDM in meeting the requirements of the federal Clean Air Act (CAA) with respect to air quality and the Intermodal Surface Transportation Efficiency Act (ISTEA) requirements.

TDM strategies comprise those efforts that attempt to change people's travel behavior. Specifically, TDM consists of actions intended to increase vehicle occupancy for both passenger and transit vehicles; increase the use of alternatives to vehicular transport; reduce the number of commute and non-commute trips by eliminating them entirely; and reduce trip lengths through various means.

TDM strategies complement the investment the region is making in alternative transportation infrastructure, High-Occupancy Vehicles (HOV) and transit, by maximizing the efficient use of these investments and should be coordinated with them. These strategies can help mitigate impacts of population growth and the resultant demand on the transportation system.

BACKGROUND

Demand management has been a component of regional transportation planning for almost two decades. Owing principally to federal and state regulatory and incentive programs, the largest TDM emphasis has been on reducing the home-to-work commute (*see* Table 3-1). Outreach and public education by rideshare agencies and transit providers has also significantly increased throughout the region.

**TABLE 3-1
IMPLEMENTATION OF TDM MEASURES**

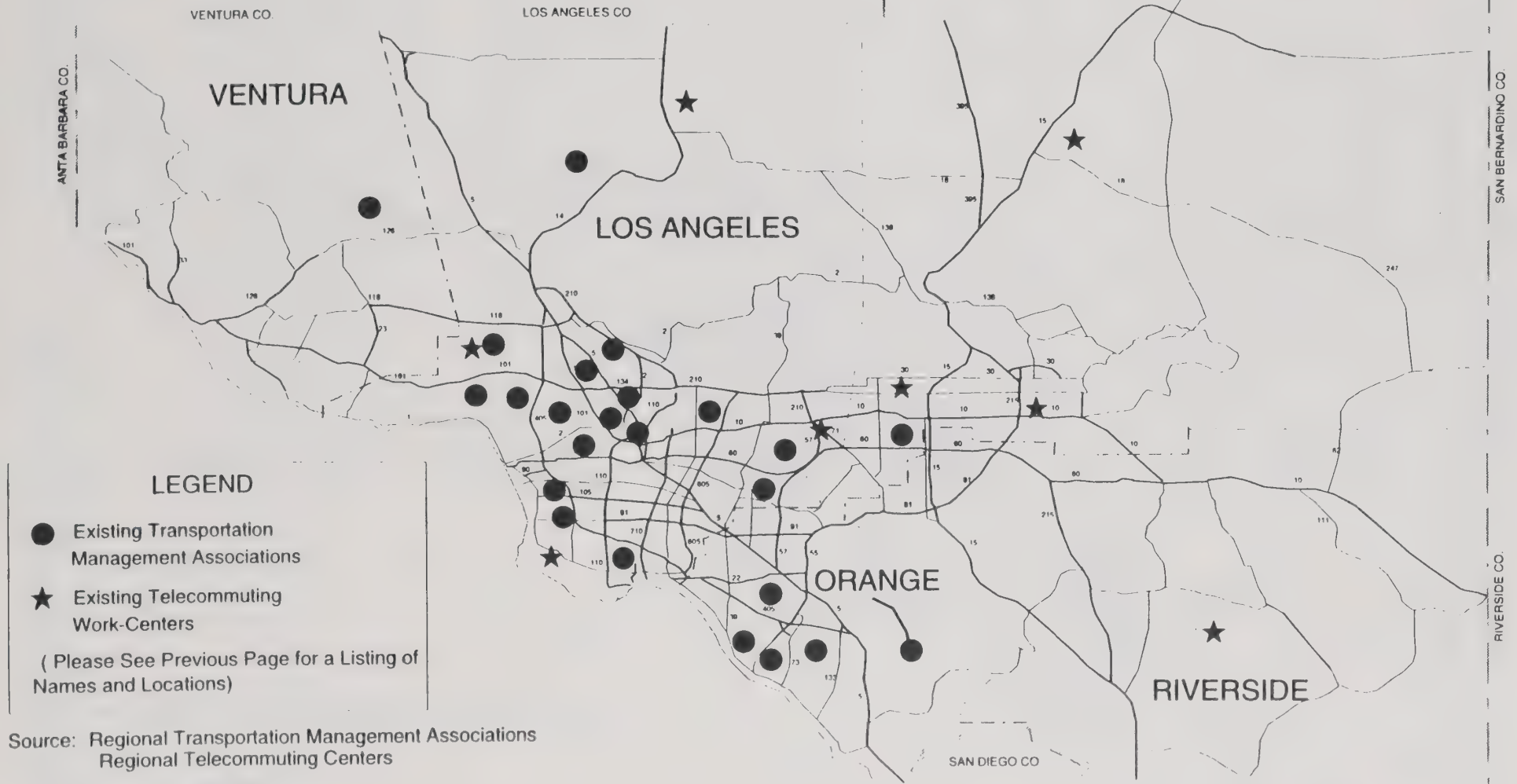
<i>Regional</i>	<i>Local</i>
Employee Commute Options Programs <ul style="list-style-type: none"> • Regulation XV • Rule 210 • Rule 1701 	Congestion Management Programs <ul style="list-style-type: none"> • Required for each urbanized county • See Table 3-6 for detailed CMP programs
Ridematching Services <ul style="list-style-type: none"> • Commuter Transportation Services, Inc. • Orange County Transportation Authority 	Telecommuting Workcenters <ul style="list-style-type: none"> • See Figures 3-1A and 3-1B
	Transportation Management Associations <ul style="list-style-type: none"> • See Figures 3-1A and 3-1B
	TDM as CEQA Mitigation Strategy

Transportation Management Associations (TMAs) that coordinate TDM functions for employers, developers and residents have also developed a niche in Southern California. There are 24 TMAs in the SCAG region and one of their primary functions is ridematching (see Figures 3-1A and 3-1B).

**FIGURE 3-1(A)
EXISTING TRANSPORTATION MANAGEMENT
ASSOCIATIONS (TMAs)**

EXISTING TRANSPORTATION MANAGEMENT ASSOCIATIONS (TMAs)	
<ul style="list-style-type: none"> • Airport Communities TMA, Ontario • Burbank City Center TMA, Burbank • Burbank Media District TMA, Burbank • Century City Westside TMA, Los Angeles • Coastal Motion, Newport Beach • El Segundo Employers Association, Culver City • Gateway Corporation Center TMA, Industry • Glendale TMA, Glendale • Hollywood TMA, Los Angeles • Irvine Spectrum TMA, Irvine • Long Beach Traffic Reduction Association, Long Beach • Newport Center, Newport Beach 	<ul style="list-style-type: none"> • North Orange County TMA, Brea • Pasadena TMA, Pasadena • Rancho Santa Margarita TMA, Rancho Santa Margarita • Santa Clarita Valley TMA, Santa Clarita • Simi Valley TMO, Simi Valley • South Coast Metro TMA, Costa Mesa • 12th Council District TMA, Chatsworth • Van Nuys TMA, Woodland Hills • Warner Center TMO, Woodland Hills • Westchester/LAX TMA, Los Angeles • West Hollywood Area TMO, West Hollywood • Westwood Transportation Network, Los Angeles
EXISTING TELECOMMUTING WORK-CENTERS	
<ul style="list-style-type: none"> ★ Apple Valley Telebusiness Workcenter ★ Antelope Valley Telecommuting Center ★ East Highlands Ranch Residential Telebusiness Workcenter ★ Ontario Telebusiness Work Center 	<ul style="list-style-type: none"> ★ Pomona Telecommuting Work Center ★ Rancho Palos Verdes Telecommuting Work Center ★ Riverside Telecommuting Work Center ★ Simi Valley Transportation Management Association

1993 EXISTING TRANSPORTATION MANAGEMENT ASSOCIATIONS (TMAs) AND TELECOMMUTING WORKCENTERS *1993 RME DRAFT*



TRANSPORTATION DEMAND MANAGEMENT STRATEGIES FOR THE REGION

Traditional TDM techniques (i.e., facility standards, transit, rideshare programs, non-motorized access, telecommuting, alternative work weeks, flex-time, and employer trip reduction programs) represent one approach to improving regional mobility. The proposed TDM program for the region incorporates strategies from two other approaches to ensure that the full range of behavioral influences on travel are addressed: market-based incentives, targeting the economic rationale behind people's transportation choices; and land-use strategies, targeting the spatial influences affecting trip-generation and destination choices.

Linking Land-Use and TDM Through Activity Areas

Activity areas (clusters of economic and/or social activity) exist throughout the SCAG region. On a community/neighborhood scale these areas attract local and nearby residents to shop, work, and socialize. Examples of such areas are "Main Streets," shopping centers and business parks. On a larger scale, areas as large as downtown Central Business Districts (CBDs) and universities attract people from around the region.

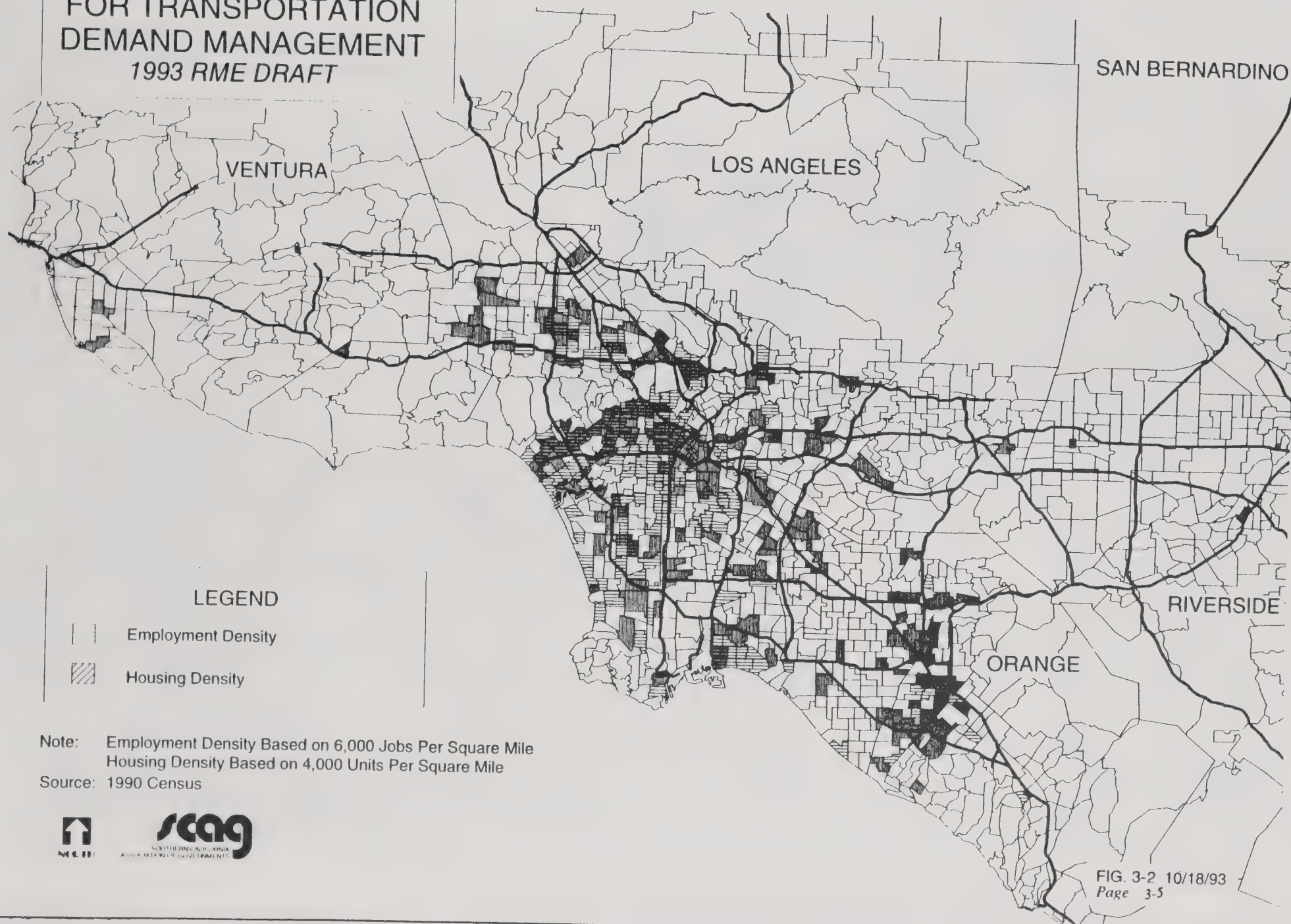
These areas represent opportunities for trip reduction through the implementation of demand management techniques in concert with the provision of transit, HOV lanes, or neighborhood shuttle services. Such areas also offer opportunities for ride matching incentives and strategies to occur. In addition, activity areas often serve, or can be designed to serve, different needs such as on-site child care, personal services (eg. banking, dry cleaners, restaurants, etc.), or shopping, thus reducing non-work vehicle trips and Vehicle Miles Traveled (VMT).

Two elements that help determine activity areas are where people live and work. The 1990 Census data were used to identify Transportation Analysis Zones (TAZ), in which significant clusters of housing and employment existed (see Figure 3-2). Based on a consensus-derived baseline for the year 2010, Figure 3-3 notes both the existing and new activity areas that are expected to grow in employment and housing densities.



Linking Demand Management and Technology

Recent and future technological advances have the potential to significantly mitigate the demand for travel within the region. As the state, national and international telecommunication infrastructure has expanded, the way the region's residents work, conduct meetings, bank, shop, and pay for goods and services has begun to change. During the

1990 ACTIVITY AREAS FOR TRANSPORTATION DEMAND MANAGEMENT 1993 RME DRAFT



LEGEND

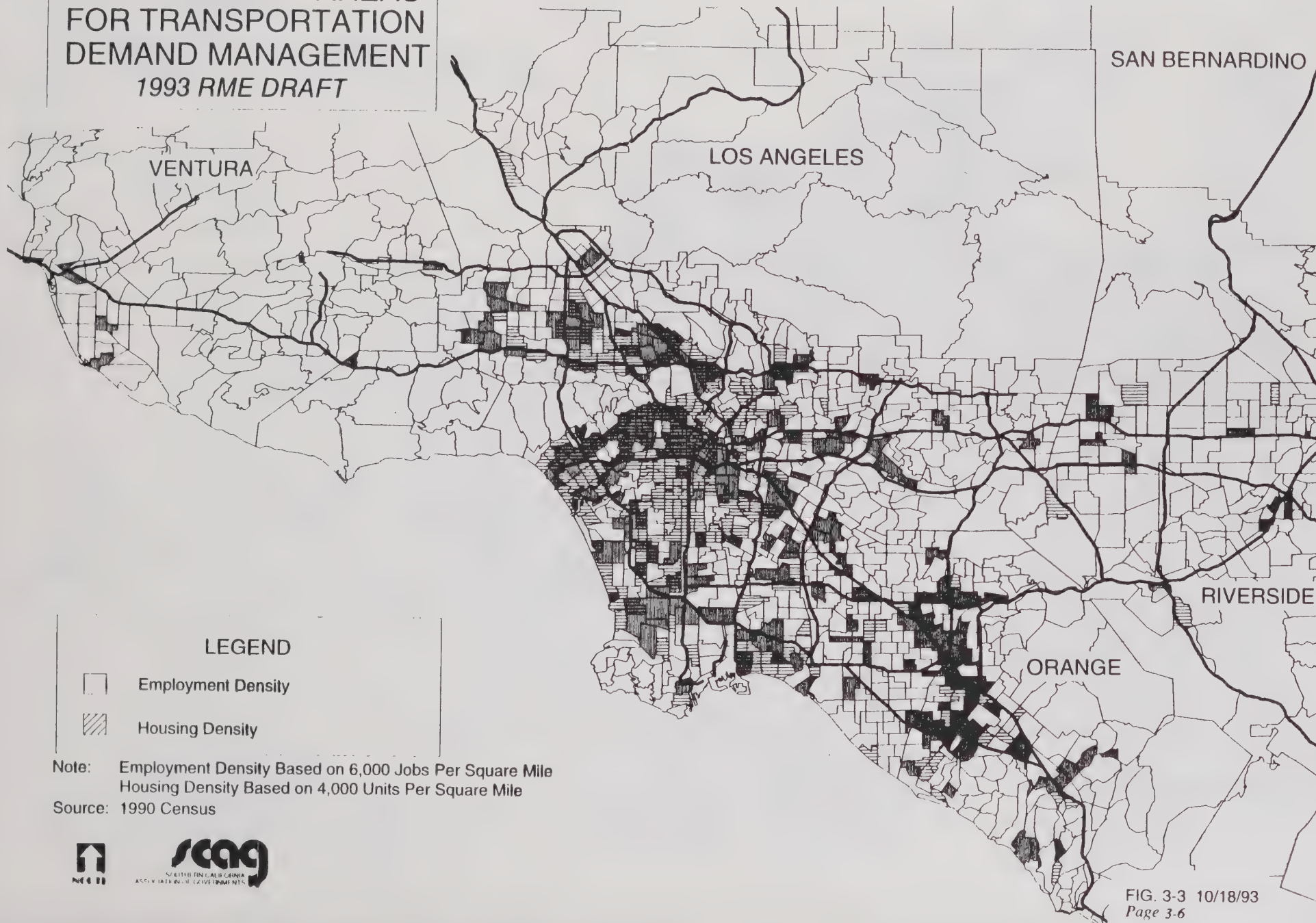
-  Employment Density
-  Housing Density

Note: Employment Density Based on 6,000 Jobs Per Square Mile
Housing Density Based on 4,000 Units Per Square Mile
Source: 1990 Census



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SOUTHERN CALIFORNIA
ASSOCIATION OF GOVERNMENTS

2010 ACTIVITY AREAS FOR TRANSPORTATION DEMAND MANAGEMENT 1993 RME DRAFT



past decade, the percentage of people telecommuting within the region at least one day a week has increased to 3.9 percent. As remote offices become more accessible (either through work-at-home arrangements or tele-work centers), this trend can be expected to continue.

Office teleconferencing facilities are beginning to become a standard part of the office environment. As technology to support this type of remote interaction continue, the implications for reducing work-related meeting trips are substantial.

Finally, technology has the potential to more effectively manage travel demand by facilitating greater system efficiencies. "Smart cards" that debit accounts could be used to pay for mobility services such as transit use, parking fees, roadway tolls, or demand response shuttles, thereby improving perceived accessibility to these transportation alternatives.

TDM Strategies

The impact of TDM strategies is indicated in the modeling presented in the Constrained Plan and the Innovative Project Series Alternative. If fully effective, employer trip reduction will show significant impacts on transit mode split 11.8 percent and a shared-ride mode split of 19.2 percent, when implemented in concert with the transit, HOV, and other mobility enhancements included in the plan. Overall, the TDM strategies and facilities included in the Constrained Plan, attain a regional Average Vehicle Ridership (AVR) of 1,330 during the peak commute hours including implementation of the Federal Energy Bill incentives for transit use and the Katz parking cash-out provision. The results for the Innovative Project Series, indicate the effects of improved feeder transit systems in conjunction with TDM resulting in a transit mode split of 12.6 percent, a shared ride mode split of 17.6 percent with a resultant increase in AVR to 1,350. These results support the emphasis on demand management in conjunction with facility improvement in the RME. This could improve use of the proposed investment in alternative modes and reduce congestion that would have had to be accommodated on the roadway system in the absence of an aggressive TDM strategy.

RECOMMENDED TDM PROGRAM

The recommended TDM program focuses on enhancing existing effective TDM programs with increased funding. The critical short- and long-term focus of the demand management component of the RME is on strengthening the integration of TDM strategies in concert with the provision of non-SOV capacity-enhancing infrastructure, particularly through the Congestion Management program (CMP), RTIP and to promote closer coordination of these strategies in project corridors/area and program planning. Thus, the program recommended in Table 12-3 concentrates on developing and refining processes that enable this to occur.

Demand management strategies should also significantly contribute to the attainment of federal, state and regional transportation performance standards, including transit, ridesharing and non-motorized mode splits, and VMT reduction as identified in Chapter 2.

The TDM program intends to address four distinct emphasis areas:

1. For non-commute trips to promote access to and within activity areas, coordinate the implementation of land-use strategies when appropriate and accepted, and facilitate education and promotion of non SOV alternatives (*see*) Table 12-3.
2. For commute based strategies to facilitate the use of non-SOV alternatives through ridematching, rideshare support facilities, efforts to increase transit accessibility, implementation of employer trip reduction programs, support of TDM demonstration programs, and support of the coordination of TDM strategies for Park-And-Ride lots (*see*) Table 12-3).
3. To implement direct and indirect market incentives that are consistent with the principles identified by the Market Incentive Task Force (*see*) Table 3-3).
4. Use technology advances in information exchange, system effectiveness and other applications to change the use of the regional transportation system.

RECOMMENDED POLICIES

The following policies are to be used to guide implementation of the regional TDM program:

- Assign TDM programs and the development of transit and ridesharing facilities priority over mixed-flow highway capacity expansion to achieve and maintain mobility in the future.
- Support the development, public seed funding of demonstration programs that are new and innovative.
- Support the extension of TDM program implementation to non-commute trips for public and private sector activities.
- Support the coordination of land use and transportation decisions with each other's capacity, taking into account the potential for demand management strategies to mitigate travel demand if provided for as a part of the entire package.
- Support the use of market incentives as a mechanism to affect and support changes in travel behavior toward the use of alternative

modes for both commute and non-commute travel.

- Support efforts to educate the public on the efficacy of demand management strategies and increase the use of alternative transportation.

Implementation of TDMs

Many of the demand management actions are implemented at the local level in conjunction with CMP. The statute requires the five counties containing urbanized areas in the SCAG region to develop a trip reduction and TDM component. Table 3-2 provides a summary of the TDM strategies contained in the region's CMO's. The CMP provides an important framework for implementing demand management strategies throughout the region, empowering local jurisdictions with control over the implementation of TDM programs.

FISCAL ISSUES RELATED TO TDM

The costs of demand management strategies have historically been shared by both the public and private sectors. Moreover, because demand management strategies have been highly tailored to individual sites, significant variation in costs exists, depending on the breadth and number of TDM actions implemented at specific sites. Both of these actions contribute to substantial difficulties in conducting, a thorough survey, as well as, an assessment of actual costs of implementing those TDMs.

Funded TDM Programs

The funding cycle is intended to assist local jurisdictions comply with the SCAQMD 1991 Air Quality Management Plan (AQMP), which requires cities to commit to the implementation of TCMs (including TDM measures) by December 1993. Los Angeles County MTA has 101 projects funded to date, San Bernardino Association of Governments has 35 non-motorized projects funded, and Ventura County Transportation Commission has 71 projects funded through STP and CMAQ funds.

**TABLE 3-2
CMP IMPLEMENTATION OF TDM STRATEGIES**

STRATEGIES	MEASURES	COUNTY				
		Los Angeles	Orange	Riverside	San Bernardino	Ventura
Single Occupancy Dis-incentives	• None Identified					
Rideshare Incentives	• Regional Rideshare Rules*	X	X	X	X	X
	• Vanpool Programs	X		X	X	X
	• Ridematching	X	X	X	X	X
	• TMA Coordination	X	X			X
	• Mobile Rideshare Marketing			X		
	• Rideshare Recognition			X		
	• Local TDM Support Programs	X				
	• Park-and-Ride Lots	X	X	X		X
Transit Service Enhancements	• Transit Service Standards	X	X	X	X	X
	• Shuttle Service		X			
Vehicle Substitutions Incentives	• Bicycle & Pedestrian Facilities		X			
	• TDM Ordinances	X	X	X	X**	
Trip Elimination Incentives	• Telecommuting Programs				X	
Trip Length Reduction Incentives	• Telecommuting Workcenters	X		X	X	
Direct Market Incentives	• Gas Tax Increase	X	X	X	X	X
	• Vanpool/carpool Subsidies	X		X		X
	• Buspool Subsidies			X		
	• Non-auto Travel Incentives				X	
Indirect Market Incentives	• Pedestrian-Oriented Design Requirements	X				
Land Use Strategies	• Growth Management		X		X	X
	• Local Land Use Impact Programs	X	X	X	X	X

* Regulation XV (South Coast Air Basin), Rule 210 (Ventura County) and Rule 1701 (Desert portions of San Bernardino County) each have complementary effects on the implementation of CMPs.

** San Bernardino County jurisdictions within the South Coast Air Basin must adopt TDM Ordinances by December 31, 1993; jurisdictions within the desert portions of the county must adopt TDM Ordinances by November 1, 1993.

MARKET-BASED APPROACHES

Market-based approaches to addressing congestion and air quality problems provide mechanisms by which system users pay the "real" cost of the transportation benefits they receive. These approaches are divided into direct and indirect market incentives:

1. Direct market incentives focus on changing the relative costs of transportation options. Pricing as a TDM action can reinforce consumer choices of travel alternatives, and can be fiscal measures aimed at financing and implementation of alternative travel options or subsidies.
2. Indirect market incentives use economic rewards (lower development costs, higher density, lower tax or fee rates) to influence urban design/siting policies that support reduced automobile use.

Market Incentives Task Force

SCAG has formed a Market Incentives Task Force composed of local government elected officials. The charge of this Task Force is to examine the impacts of developing user-based pricing, subsidy and reinvestment actions. The Task Force has developed a number of principles on how market incentives should be developed and what actions are to be considered (*see* Table 3-3). The recommendation of this group will be incorporated into the final draft.

**TABLE 3-3
MARKET INCENTIVE PRINCIPLES**

GOALS	ACTIONS
Reduce congestion, mobile source emissions, and foster regional economic advantage	<ul style="list-style-type: none"> • Development of new technologies including clean vehicles • Fees, subsidies and reinvestment
Reduce the use of single occupant vehicles	<ul style="list-style-type: none"> • Fees, subsidies and reinvestment
Achieve mobility and air quality goals	<ul style="list-style-type: none"> • Fees, subsidies and reinvestment • Minimize the need for command and control approaches
Mitigate impacts on business	<ul style="list-style-type: none"> • Opportunities for regional economic competitiveness
Avoid or mitigate impacts on user groups	<ul style="list-style-type: none"> • Subsidy and reinvestment programs
Avoid or mitigate geographic impacts	<ul style="list-style-type: none"> • Subsidy and reinvestment programs
Design and mitigation of market-based programs	<ul style="list-style-type: none"> • Consult to provide input and consider different subregional conditions
A stable base of transportation funding	<ul style="list-style-type: none"> • Consistent with user-based financing but not as a source of general revenues

SUBREGIONAL INPUT

Local jurisdictions, through subregional groups, have provided input on the selection, implementation, and phasing of appropriate TDM strategies for the region (see Table 3-4). Addressing implementation of demand management strategies at the subregional level will allow greater flexibility in reaching regional trip reduction goals by improving coordination between local jurisdictions and regional agencies while ensuring consistency among implementation plans. It also provides a forum to initiate an assessment of how much the region can rely on TDM strategies to meet mobility and air quality goals.

TABLE 3-4
SUBREGIONALY RECOMMENDED IMPLEMENTATION PROGRAMS

ACTIONS/PROGRAMS	SUBREGIONS/PRIVATE AND NON-PROFIT ORGANIZATIONS
TDM-Linked To Transit Improvement: <ul style="list-style-type: none"> ● Facilitate linkage with existing modes ● Increase accessibility ● Additional bus and shuttle services ● Accommodate mode shifts away from trip reduction goals ● Access to employment and activity areas ● JPA to meet transit needs without subsidy ● Expand system based on ridership surveys 	Southeast Los Angeles County, Western Riverside Council of Governments, South Bay Cities Association, City of Palmdale, Natural Resources Defense Council,
TDM-Linked To Parking: <ul style="list-style-type: none"> ● Parking supply and pricing ● Park-And-Ride lots for work/activity areas ● Restriction on public and street parking 	Orange County, Westside Cities, San Gabriel Valley Association of Cities, South Bay Cities Association
TDM-Linked To Land-Use: <ul style="list-style-type: none"> ● Densification near activity areas ● Densification around transit corridors/lanes ● Mixed use development ● Coordinate transportation improvements with land-use ● Incorporate urban form into development review policies ● Physical design to support alternate modes ● Subregional network with local feeder network 	Orange County, Westside Cities, Southeast Los Angeles County, Western Riverside Council of Governments, Arroyo Verdugo, South Bay Cities Association,
TDM-Linked To Rideshare Incentives: <ul style="list-style-type: none"> ● Encourage carpool/transit ● Education programs ● Flex-schedule beyond Reg. XV ● Enhance Reg. XV requirements (e.g., less than 100 employees) ● Telecommuting ● Evaluate and support most effective TDM projects ● Enhanced employer-based projects ● Increase membership & service of TMA/TMO ● Retail, shopping centers ● Multi-modal system to employment and activity areas ● Address non-commute trips ● Participate in AQMD formulation of "back stop" ● Improve ridesharing and non-motorized modes to work ● Phasing of credit to ordinance, CIP/TIP adoption phases 	Orange County, Western Riverside Council of Governments, Natural Resources Defense Council, Arroyo Verdugo, Southeast Los Angeles County, Westside Cities, City of Los Angeles, San Gabriel Association of Cities, South Bay Cities Association

ACTIONS/PROGRAMS	SUBREGIONS/PRIVATE AND NON-PROFIT ORGANIZATIONS
Other: <ul style="list-style-type: none">● Gas tax● Electric vehicles, alternate fuels● Child care centers near transit● Child care centers near work site● Renewable energy sources● Emission fee, road tolls● Market-based incentive● Set goals for bike contribution in overall mix● Prohibit removal of bike ways	Orange County, City of Brea, Westside Cities, Southeast Los Angeles County, Western Riverside Council of Governments, Orange County Bicycle Coalition, Inland Empire Economic Partnership, City of Palmdale, Northwest Area Planning District, San Jacinto Valley Area Planning District

INTRODUCTION / BACKGROUND

A major goal of the 1993 Regional Mobility Element (RME) is to reduce reliance on the single-occupant automobile. Public transportation (transit) will be increasingly important in achieving regional air quality attainment and mobility goals. Transit services are provided by fixed guideway (usually rail) and bus (fixed and demand response) modes. The Regional Transit Program (RTP) of the RME is intended to create the construct for a centers-based transit network and to those identify policies, actions and activities necessary to develop and implement a efficient, safe, attractive, and cost-effective public transit system which support and complement each extant regional transportation systems. The ultimate aim is for transit to increase its significance and become an increasingly viable mobility alternative in Southern California.

ASSESSMENT OF CURRENT TRANSIT ROLE IN THE REGION

Currently, public transportation in the Southern California region was operated directly or under contract by about 17 separate public agencies. Public transportation providers operated approximately 516.5 million unlinked trips in fiscal year 1990 in the SCAG region. Transit providers operated more than 125 million revenue miles and slightly less than 10 million revenue hours with a morning peak-hour bus fleet of about 2,800 vehicles. A breakdown of transit revenue hours and revenue miles by county is shown in Figures 4-1, 4-2. Public providers in Southern California collectively own one of the largest bus transit fleets in the world, with the LACMTA operating the largest transit bus fleet in the United States.

The "intersecting grid" design is currently the dominant route network used in Orange County, the City of Los Angeles, and areas of L.A. County with routes currently or formerly serviced by SCRTD. The grid network comprises about 235 individual routes operated on north-south and east-west streets and providing extensive area coverage. Ninety-eight percent of existing regional transit bus service is provided by nine major public providers (Figures 4-3, 4-4 and 4-5): the Los Angeles County Metropolitan Transportation Authority; the Orange County Transportation Authority (includes the former OCTD) in Orange County; the Riverside Transit Agency (RTA), OmniTrans, and South Coast Area Transit (SCAT) -- the major regional operators in Riverside, San Bernardino, and Ventura counties, respectively -- the municipal operators in Long Beach, Santa Monica, and Foothill Transit and the Los Angeles Department of Transportation (LA DOT) provide bus services

FIGURE 4-1

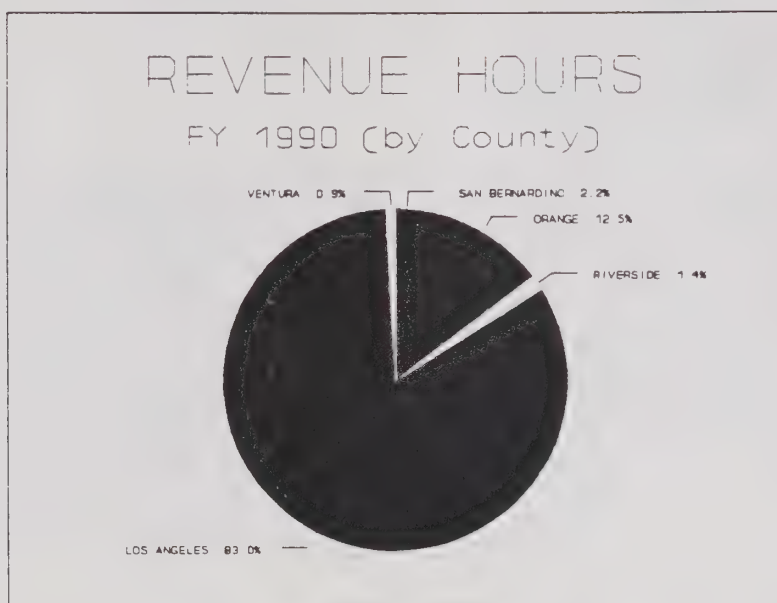
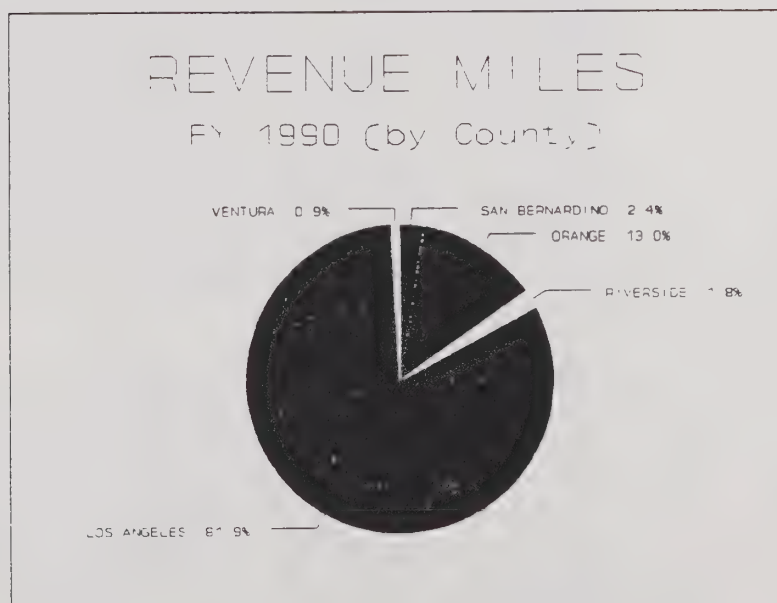


FIGURE 4-2



in Los Angeles County. The Metrorail (urban rail) and Metrolink (commuter rail) are operated by the LACMTA and the Southern California Regional Rail Authority (SCRRA), respectively. Municipal transit systems in L.A. County, and the regional operators in Riverside, San Bernardino, and Ventura counties operate bus services oriented toward a "Hub and Spoke" or "radial arm" configuration with a focus on major transit hubs, incorporating approximately 130 individual routes.

Metrolink System (Commuter Rail)

Commuter rail service (Figure 4-6) between Los Angeles and San Juan Capistrano began in the summer of 1990. In October of 1992, the first three lines of the Metrolink regional commuter rail system began service between Los Angeles and Moorpark, Santa Clarita and Pomona. The Pomona Line was extended to Claremont, the Montclair Transit Center, and to Riverside and San Bernardino 1993. A number of reverse commute and off-peak train services were initiated in spring of 1993 and expanded in October of 1993.

Metrorail System (Urban Rail)

The Metro Blue Line began service between the Pico Station and Downtown Long Beach in the summer of 1990; thus, rail transit returned to the SCAG region after a 30-year hiatus. In the spring of 1991, the Flower Street subway extension opened, permitting the Blue Line to reach the Los Angeles Financial District. The first segment of the Metro Red Line began operations between Union Station and Alvarado Street in early 1993.








The Metro Green Line is currently under construction as part of the Glen Anderson (I-105) Freeway project and is expected to open in 1994. Construction continues on the Red Line between the Alvarado Street and Western Avenue stations along the Wilshire Boulevard corridor. Red Line Segments 2 and 3 have received full funding commitments from the Federal Transit Administration. The Pasadena segment of the Blue Line has received funding from LACMTA. Service to Universal City (Red Line) and to Pasadena (Blue Line) scheduled to become operational in the late 1990s (figure 4-7).

Existing Intercity Rail Service (AMTRAK)

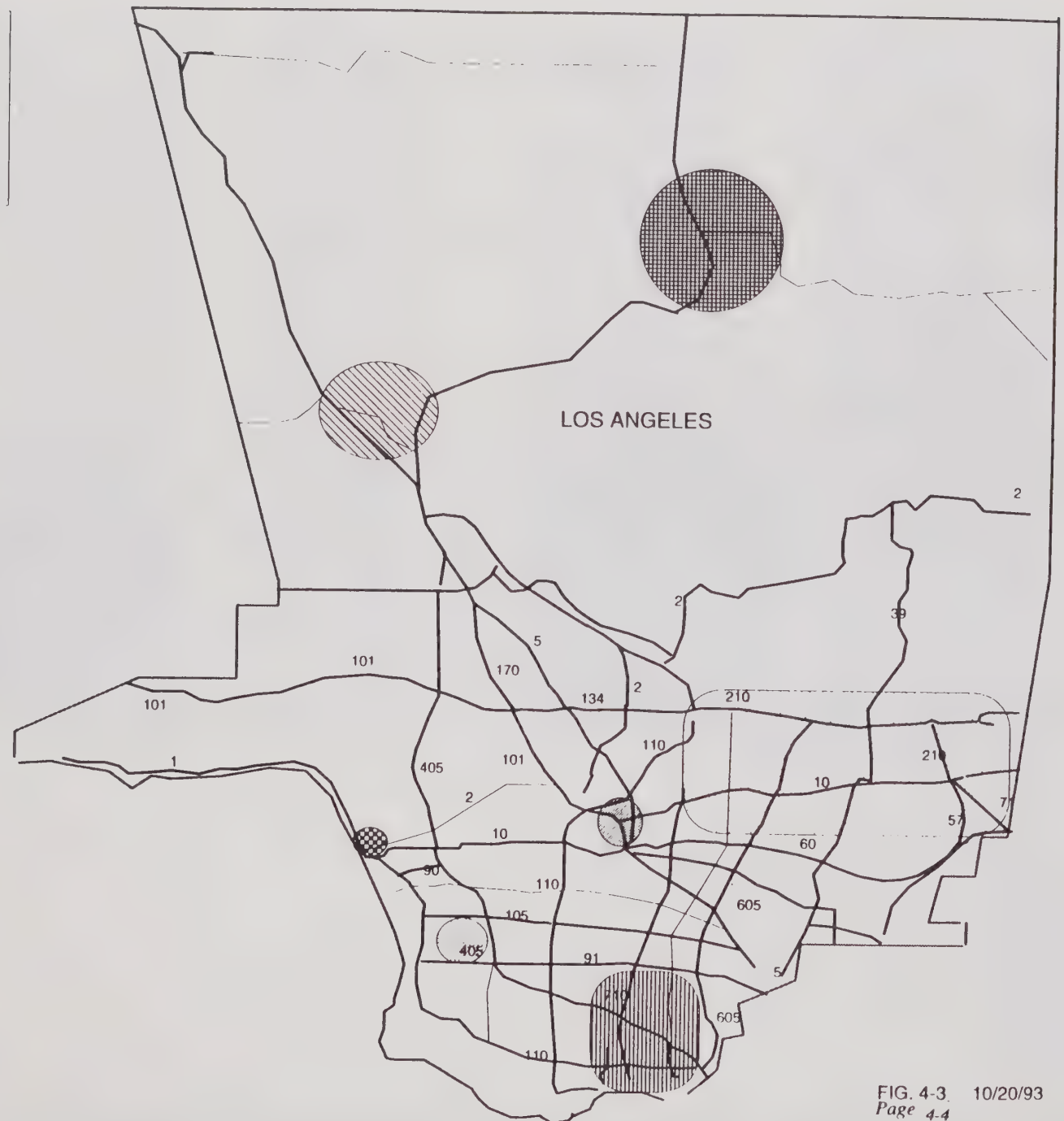
Intercity passenger trains (Figure 4-7) serve primarily business and recreational trip markets, providing service between major urban centers, with most trips more than 50 miles in length. The SCAG region is currently served by five transcontinental trains operating daily or weekly service. Two intra-state Amtrak corridor services operate between San Diego, Los Angeles and Santa Barbara. The corridor service operate eight trains daily between Los Angeles and San Diego with two service extensions to Santa Barbara.

LOS ANGELES CO. MAJOR MUNICIPAL TRANSIT PROVIDERS 1993 RME DRAFT

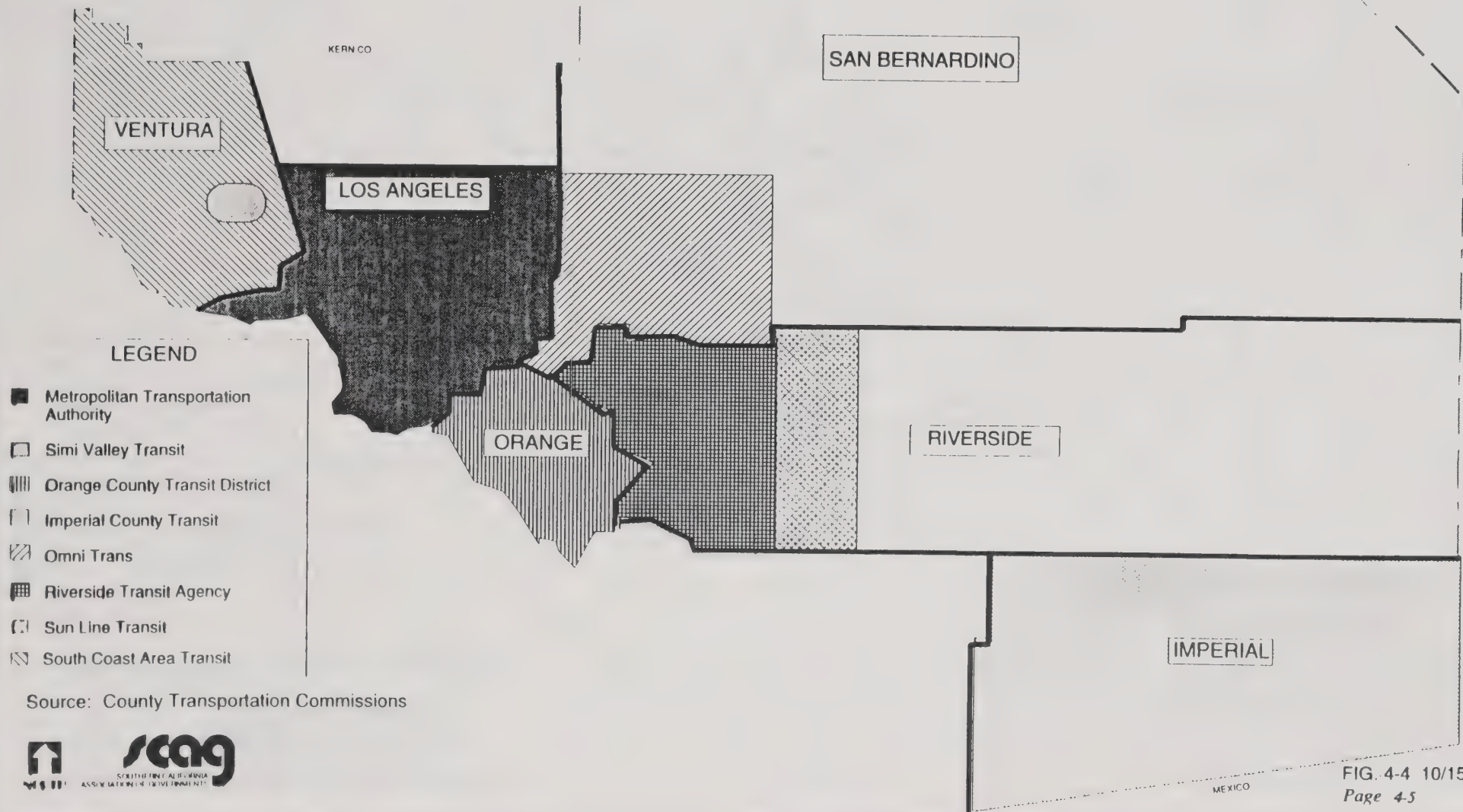
LEGEND

-  Los Angeles Department of Transportation
 -  Foothill Transit
 -  Santa Clarita
 -  Torrance
 -  Long Beach
 -  Santa Monica
 -  Antelope Valley Transit Authority
- (See Next Page for Regional Providers)

Source: Metropolitan Transportation Authority



SIGNIFICANT REGIONAL TRANSIT PROVIDERS 1993 RME DRAFT



1993 INTERCOUNTY BUS ROUTES 1993 RME DRAFT



FIG. 4-5 10/11/93

INYO CO

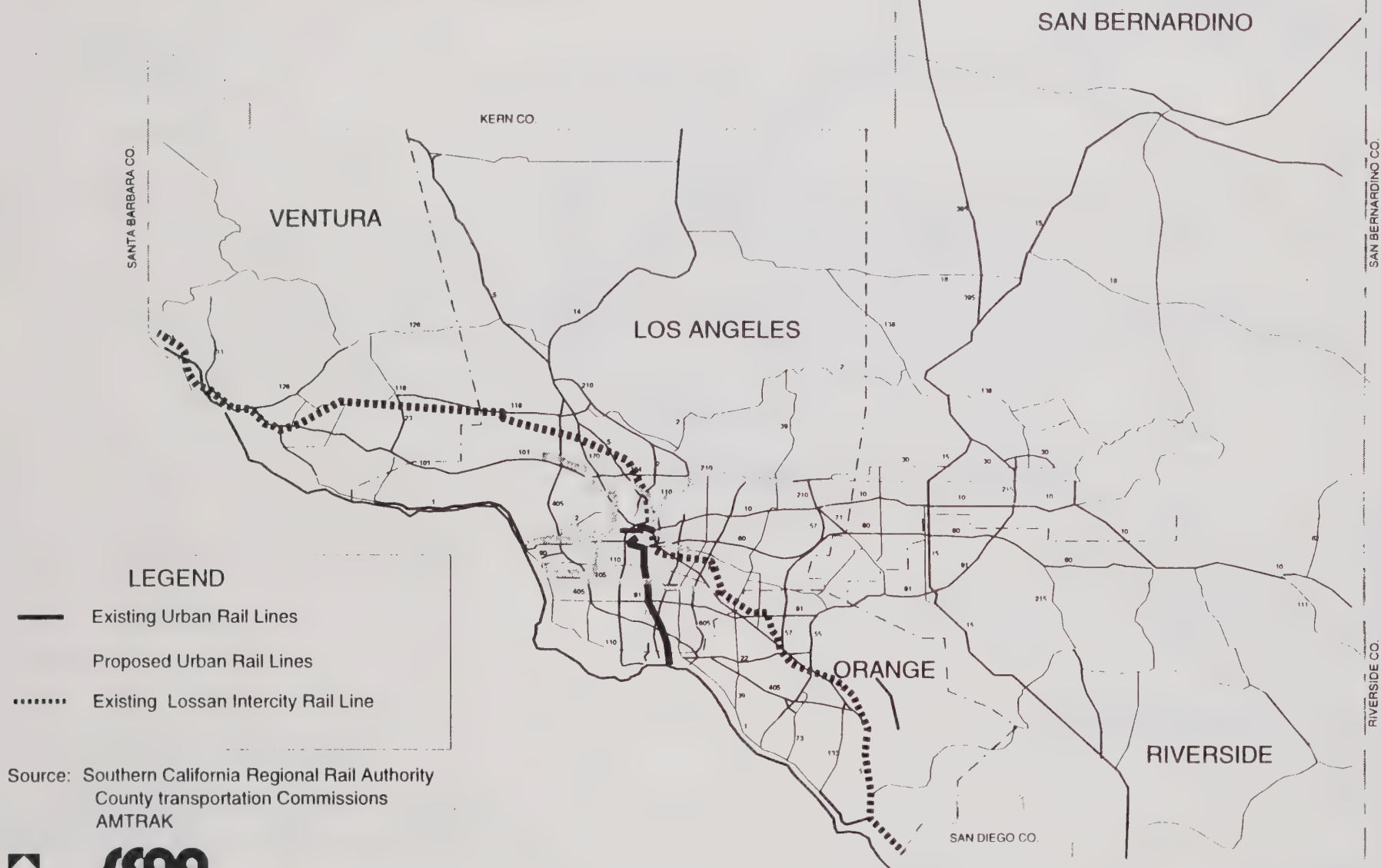


RIVERSIDE CO.



FIG. 4-6 10/15/93
Page 4-7

1993 EXISTING AND PROPOSED
URBAN & INTERCITY RAIL LINES
1993 RME DRAFT



Source: Southern California Regional Rail Authority
County transportation Commissions
AMTRAK

IMPLEMENTATION OF TRANSIT ACTIONS IN THE 1989 RMP

The 1989 RMP identified 24 specific Transit Program Actions to be addressed and undertaken as part of the plan implementation process, covering three major categories: development of new revenue sources, capital construction and equipment acquisition, and the planning process. These actions were also included as TCMs in the 1989 and 1991 South Coast Air Quality Management Plan in the South Coast Air Basin (SCAB) region. Since the adoption of the 1989 RMP, significant progress has occurred to implement the transit program.

The most significant of these include: voter approved and Legislative actions that provided state (Props. 108, 111, 116) federal (ISTEA) and county-wide (measures A, C, I) new source capital funding for bus/rail projects; implementation of new rail service on the Blue Line from Long Beach to Los Angeles, Red Line segment MOS-1, Metrolink commuter rail lines, purchase of transit vehicles; and full-funding commitments from Federal Transportation Authority (FTA) for Red Line Segments MOS 2 and 3.

Since the RMP's adoption, various actions have been undertaken throughout the region which implement new and expanded transit services. A good example of these implementation actions have occurred in Ventura County. VCTC in cooperation with county transit providers and local jurisdictions has completed a number of transit studies. These studies identified a number of bus and rail improvements that when fully implemented, will significantly enhance public transportation in the county. These enhancements include new intra-county demonstration express bus services operating on the Highway 101, 126, the Eastern Area and the Central Area corridors. The new service is designed to connect those communities along and adjacent to these corridors and to facilitate access to the existing and emerging rail improvements. These new demonstration services will be funded under the CMAQ program with scheduled start-up in 1994.

In addition to the currently existing Metrolink service to Moorpark, Ventura has identified a number of new rail programs to be implemented by the year 2010. These include expansion of Metrolink to Ventura, the Santa Paula line extension, and new service between Ventura and Santa Barbara. Additionally included is expansion of inter-city rail services on both the Coast Line, LOSSAN North and future rail service using new technologies for high and medium speed rail in the Coastal corridor. These rail enhancements will be funded jointly through anticipated state bond measure and countywide supplemental sales tax funds.

CENTERS-BASED TRANSIT SYSTEM

The objective of the centers-based transit network (CBTN) is to develop and implement an multi-modal transit system that connects regional activity centers with their surrounding communities, sub-regional areas, and Southern California as a whole. The functional purpose of the CBTN is to facilitate user access, egress and distribution among modes, service types and attractor/generators. The centers-based transit network is sub-regional in orientation, with a primary service focus toward activity centers and their component attractor/generators.

The flexibility of the centers-based network is in its ability to accommodate transit service development that reflects the needs, goals and objectives of the region as a whole, and for activity centers individually. It is this ability to develop service(s) tailored to meet specific needs that precludes a "one-size fits all" application. Service design will directly reflect the specific service characteristics and use needs required to provide maximum utility to the user. It is purpose of this section to identify and discuss the construct of a centers-based network and its development and implementation.

Successful implementation of an efficient, center-based transit network will require the use of three primary service components functioning at the regional/inter-regional, sub-regional and local level. These service components include: inter/intra-regional rail and express bus, sub-regional urban rail and express/limited bus, and local transit inclusive of area circulators, shuttles and demand response services where practical.

Intra-regional and Inter-regional transit services

The intra-regional service comprises those major transportation facilities that are regional in orientation, connect two or more subregions, and major regional activity centers and other inter-modal facilities such as seaports, airports, and inter-city rail stations. Intra-regional transit will include the Metrolink system which provides "end-point-to-end-point" service with limited stops. It anticipated that by the year 2000 the Metrolink system will be fully operational and provide approximately 99 daily train movements throughout the region. The intra-regional service will be supported by the existing inter-county express bus system providing "facility to destination" that uses, the regional transitways and freeway/arterial HOV lanes (Chapter 5) and is designed to complement, support and backfill the rail program.

Inter-regional service includes intercity passenger rail, and the anticipated development of high speed rail service on the Coastal and California High Speed Rail Corridors. Existing inter-regional transit includes LOSSAN corridor service between San Diego, Orange County, Los Angeles, and Santa Barbara. The SCAG region is also served by four transcontinental rail routes. In response to US DOT's designation of the

California High Speed Rail Corridor the California Transportation Commission has adopted a goal that development of high speed rail is a priority for California. This has been supported by a number of actions and the funding for a number of studies to reach the state goal.

The enactment of SCR 1 specified the final alignment for the California High Speed Rail Corridor, established the California High Speed Rail Commission, and created funding in addition to Propositions 108 and 116 for actions related to creation of high speed rail in California. In addition, pending and proposed legislation will also fund development of medium speed rail applications on the Coastal Corridor, the Alameda Corridor, provide capital and operational support for regional and inter-city rail improvements in Southern California. SCAG at the request of the Federal Railroad Administration has undertake management responsibility for a long-range access and capacity required at the Los Angeles Union Passenger Terminal.

Sub-regional transit services

The sub-regional service facilitates trips between and within activity centers. Sub-regional service will be provided by the Metrorail system supported by the existing "point-to-point express and limited transit service. Long range plans identified the use of fixed-guideway transit (electric trolley) lines operating on dedicated rights-of-way, such as arterial HOVs. Access to sub-regional service is supported at rail and bus facilities by local transit networks, circulators, feeder services and private for-hire services such as shuttles and jitneys. Private automobiles driven to park-and-ride lots at stations and terminals will also be a major component of the feeder system at the home end of trips.

Local transit services

Regional activity centers (Figure 4-8) and sub-regions are common to all the program elements of the RME and are the focus areas for those actions that will develop, measure, and evaluate the strategies for both mobility and air quality goal achievement. The centers-based transit system is by its nature designed to facilitate inter-modal access, movement, and distribution of passengers among its component services. It is within the activity centers, local jurisdictions and the subregions where the development of public transit service(s) will occur.

The local service component facilitates trip distribution between and among attractor/generators within activity centers. Service is focused on local transit hubs and/or designated transit activity areas within centers. Local transit includes feeder service, to major intermodal terminals and rail stations, connectors lines between hubs, circulators within centers, shuttles from peripheral parking lots into centers, and private for hire services operating in a demand response format or along designated corridors similar to the jitney service currently operating in Atlantic City.

The local service component of the centers-based transit network differs from existing service in that it is focused towards transit hubs or designated activity centers (Figure 4-9) and places emphasis on shorter route lengths with a higher frequency of service, and route designs which enhance availability and accessibility to the user and are coordinated with existing and/or desired land-use and developments. Development of service within individual centers will be dependant upon needs and goals of each center.

It will be primarily the responsibility of the local jurisdictions and subregions to develop the types and levels of transit service(s) that will meet local jurisdiction and sub-regional needs, goals, and objectives. It is the diversity among centers, local jurisdictions and subregions that precludes the application of any single model for transit system development. However, there are a number of development criteria that can be applied to all centers and are designed to consider, reflect and respond to: existing, emerging and desired land uses; levels of required (functional) inter-modal coordination; required transit capital investment; identified and targeted market groups; potential for joint development; institutional cooperation; and defined quantitative and qualitative sub-regional and local transit objectives developed and coordinated with the overall mobility strategy.

The development process using the criteria noted above will directly affect and impact the mobility strategy through influencing the overall mix of transit programs. It will further impact regional funding decision-making through transit project prioritization at the subregion and corridor level mandated by the ISTEA. The development of specific transit projects that meet the needs of local jurisdictions and subregions will become the basis for RME Transit Program Actions, be quantified as TCMs for air quality attainment, and comprise a significant portion of the final RME Transit Program.

Relationship to Facilities

The multi-modal rail stations and transit hubs that support the existing and emerging rail system will be the first facilities to become operational. These facilities and hubs will be designed to meet specific level of service requirements and the needs of the communities in which they are located. These designs and configurations may vary considerably from simple layover or designated transfer areas, "walk-on" platform rail stops with minimal passenger amenities to developed multi-modal regional/sub-regional station sites with substantial passenger amenities and adjacent or direct access to park-and-ride lots and/or freeway/arterial HOV facilities.

These high and medium capacity transit facilities will support and complement the implementation and operation of the HOV/transitway systems as collection/distribution points. "Facility to destination" and

"limited access/destination" express bus service will provide an integrated link to regional park-n-ride lots located within sub-regional areas without direct access to the rail network. "Limited stop" transit service would provide higher capacity circulation/distribution within major employment centers through arterial HOV/transitway application linking urban rail stations and local transit hubs serving other attractor/generators.

It is the functional interaction (when-where-how) between facilities, transportation systems and urban form which will influence and determine the form and implementation of the centers-based transit network. There are a number of significant areas to be considered regarding the form/function and interaction of centers based system and its facilities. This interaction will be the basis of future transit program actions as part of the regional transit strategy as well as the over mobility strategy for the SCAG region.

As the centers-based transit network is implemented, activity centers will be connected to and by an extensive network of transit "focal points". Clearly, full implementation of such an extensive system is (as in 1989) beyond the capacity of currently available funding. However, initial implementation actions should be focused toward specific existing transit hubs which support the development of locally developed transit goals, and objectives for specific centers by affected local jurisdiction and subregions.

There are a number of existing and emerging transit hubs that facilitate intra-and inter- modal functions. A number of examples include the following:

1. Los Angeles Union Passenger Terminal (Union Station in the Los Angeles CBD): Metrorail (urban rail), inter-city rail, Metrolink commuter rail, local and express bus.
2. Long Beach Transit Mall (downtown Long Beach): Metrorail, local and express bus.
3. Pasadena CBD, no existing facility: local and express bus.
4. El Monte Transit Station: local, limited and express bus.
5. Montclair Transit Center: Metrolink commuter rail, local and express bus.
6. Fullerton Transportation Center (Amtrak station): inter-city and commuter rail, local bus.
7. Santa Ana Regional Transportation Center (Amtrak station): inter-city and commuter rail, local bus.

8. Santa Ana Transit Terminal (Santa Ana CBD): local and express bus.
9. Anaheim Amtrak Station (Anaheim Stadium): inter-city and commuter rail, local bus, express bus.
10. RTA Downtown Terminal (Riverside CBD): express and local bus, inter-city bus.
11. Fourth Street Transit Mall (San Bernardino CBD): local bus, express bus.
12. Huntington Center (Golden West College): local bus, inter-city bus.
13. Martin Luther King, Jr. Transportation Center (Compton): Metro-Rail, local bus.

Service Development and Integration Within Centers:

As previously discussed, centers oriented services are designed to reflect locally developed needs and objectives. An example of center oriented transportation improvements which have integrated into overall community development have occurred in the City of Pasadena. The civic center transit station incorporated low and high income housing, retail and office activities and pedestrian amenities into a single site development. The City has additionally amended its General Plan to encourage similar mixed use development adjacent other stations. A new circulator system is being currently implemented with plans for existing local transit service redeployment to link the City's major attractor/generators with rail stations. To date the City has used transit development to leverage \$70 million in committed private sector development.

Additionally, the Arroyo-Verdugo and the San Gabriel Valley sub-regional organizations have adopted support positions for development of an east-west rail corridor (Burbank to Pasadena), the Glendale/Burbank MetroRail line and the Auza BlueLine extension projects.

REGIONAL TRANSIT STRATEGY

The clearest measure of success for any transit strategy is in its effectiveness to attract and retain new users. The mix of programs, their systemic application, design and the management of support programs and actions will determine the performance and quality of the regional transit strategy. In consequence, the services provided must be the following:

- available at times convenient for the user
- accessible for use without physical or institutional barriers
- designed from the user's point of view.

This demands a series of actions that create a transit-friendly environment that provides: safe, secure, and attractive service; simple and easily understood transit information systems; coordination and integration with land uses, CMP and demand management actions, other transportation facilities; supported by a developed marketing strategy.

Regional public transportation improvements are currently directed toward the implementation of the rail programs designed to create the infrastructure that supports service on high-and-medium-capacity corridors. This program mix was identified by county transportation commissions and transit providers, and comprises the FY 1993-99 Regional Transportation Implementation Plan (RTIP) and the long-range funded programs.

The proposed improvements (see Figures 4-6 and 4-7) include eight urban rail lines, nine commuter rail lines, and two inter-city corridor lines. Although expansion of bus programs is limited under the current identified local plans, it is estimated that 3600 hundred buses will have to be purchased to maintain the existing levels of bus service. However, alternative fuel mandates and unforeseen demands capital and operational expansion may seriously impact on the region's ability to maintain existing transit service.

Transit Program actions must include those that create additional stable revenue sources that fund expanded transit operations and enhance capital investment for the region's transit systems. Several long- and short-term financial actions that must be addressed, the short-term include: optimizing the use of existing resources to better serve transit; prioritization of expenditures to minimize operating costs; and effective management and maintenance of existing capital investments. Long-range actions must address the need to finance and fund new operations to serve the region's growing population in support of mobility and air quality goals. Future revenue must be developed from a variety of sources that are not solely dependant on retail sales. A number of fee based new revenue sources are currently under discussion within the region.

Achievement of an multi-modal centers-based transit network requires the integration and coordination of bus and fixed guideway projects with the other component parts of the Metropolitan Transportation System (MTS). ISTEA mandates require that the regional development of transit programs must be evaluated, prioritized and implemented on the basis of cost effectiveness, operational efficiency and the attainment of mobility and air quality objectives. Practical implementation of the tasks necessary to address operational and systemic issues should be incorporated into the planning process at an early stage, be given equal consideration as other mobility/air quality program options, be supported and complemented by demand programs and performance-based congestion management program objectives and incorporated into corridor/sub-area analyses or as part of the California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) process. Additionally, these changes in process, assist in the implementation improved transit TCM programs (described in Chapter 11) and actions as required and identified by the Federal and California Clean Air Acts and be given priority in regional decision-making process with regard to project selection for funding.

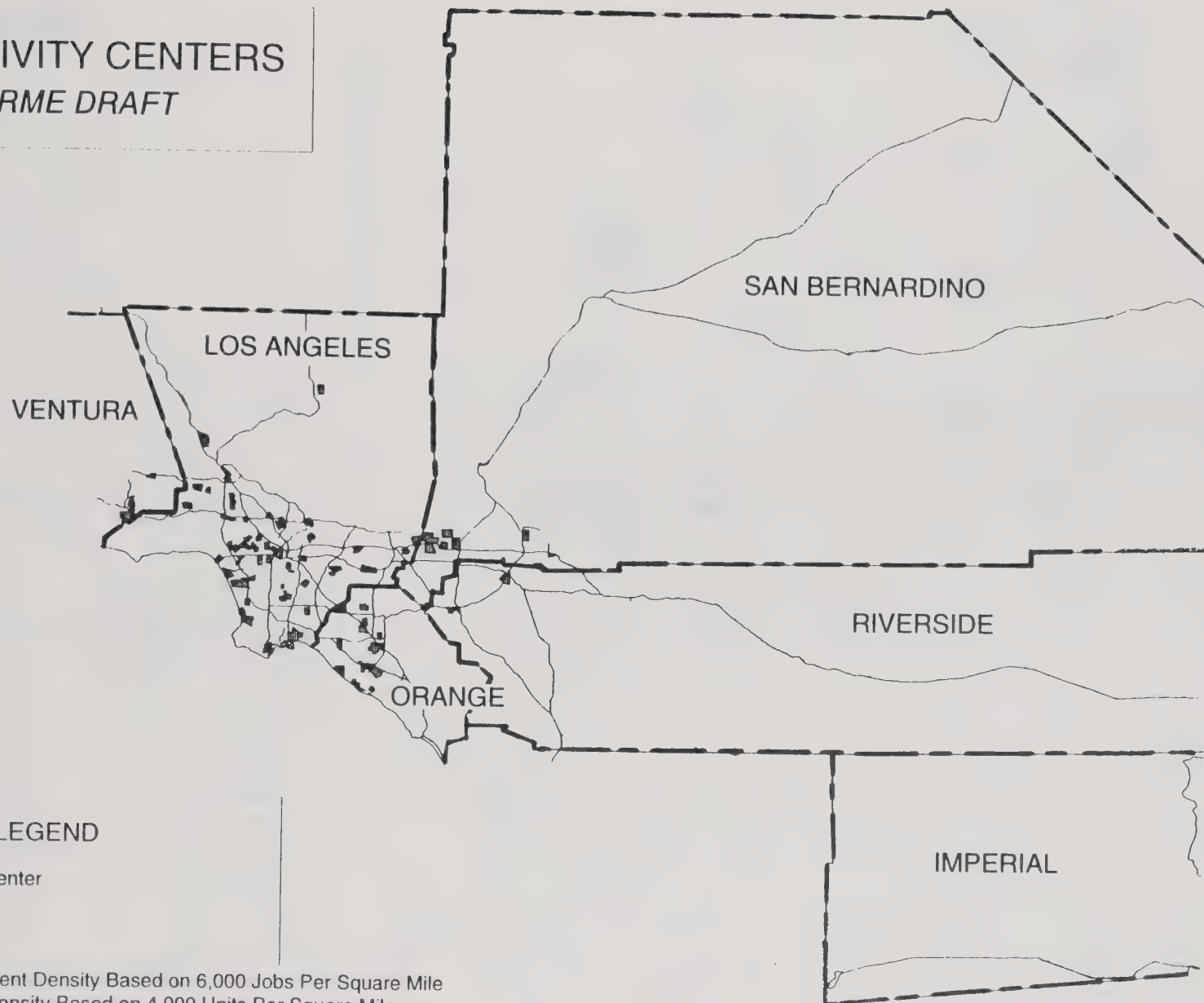
FINAL RME TRANSIT PROGRAM DEVELOPMENT

The transit program mix included in the Constrained Project Alternative (The Project) is composed of existing bus (levels of bus service) plus identified rail projects (RTIP), and those projects for which funding currently exists can be expected to be reasonable available. In addition to the transit projects, The Project included a number of pricing and demand management actions. Completed model projection indicate that by 2010 that rail and bus will accommodate 11.8 percent or 1,403,000 trips of the approximately 11.9 million peak-hour home to work person trips.



In addition to The project, another scenario was modeled which included a number of transit service enhancements. The enhancements included substantial bus and rail service expansion and potential impacts of service (feeders, circulators, Smart Shuttles) within activity centers (See Figures 4-8 and 4-9). Although transit program enhancements are currently not fundable, the modeling indicated that implementation of these enhancements could accommodate 12.6 percent or 1,498,000 trips of the approximately 11.9 million peak-hour person trips under this scenario.

The mode split projection of the Project represents a substantial increase in the demand and use of public transportation services in the region. Clearly, given the existing program mix, to accommodate this substantial increase in use and to achieve an integrated multi-modal centers-based system will require the evaluation and coordination of critical operational, programmatic, and infrastructure issues:

1990 ACTIVITY CENTERS 1993 RME DRAFT



LEGEND

-  Activity Center
-  Freeway

Note: Employment Density Based on 6,000 Jobs Per Square Mile
Housing Density Based on 4,000 Units Per Square Mile
Source: 1990 Census



1990 ACTIVITY CENTERS WITH THREE MILE RADIUS 1993 RME DRAFT



Operationally, these include 1) The development of service criteria and objectives that support redeployment and reallocation of existing transit assets which increases service efficiency, complements and exploits demand management programs, CMP objectives, and maximizes user access to the system, 2) Expansion of express and limited stop bus programs that complement and "back-fills" rail programs, exploits the HOV network and adjacent and regional Park-and-Ride facilities and, 3) Provides access to regional airports, seaports and inter-city rail facilities.

Programmatic issues address the types of local, circulator, shuttle and demand response (possibly jitney) service applications developed by and for the needs, objectives, and goals of individual activity centers, their host communities, and the adjacent sub-regional area(s). The emphasis of centers oriented development is to implement a number of traditional and non-traditional service applications which 1) Create additional transportation choice options, 2) Support existing bus and rail service, and 3) Support existing land-uses and planned or desired development.

From the regional perspective, the existing public transportation network comprises 17 independent bus systems. This often times results in services that are duplicative, competitive, modally uncoordinated, and difficult for use by for the rider. Beyond the operational concerns, the feasibility, practicality and desirability of retaining an individual provider-oriented infrastructure needs to addressed and evaluated. Ultimately, the type of transit system infrastructure will greatly determine and impact regional transit systems' performance and associated investment decision-making. The development of succinct and defined infrastructure goals and objectives should be a priority transit program action.

TRANSIT PLAN ACTIONS:

As previously discussed, the program mix and support programs included as a part of the Regional Transit Strategy influence those specific actions which comprise Transit Program Actions. In addition to the specific capital program actions identified in Chapter 12, there are a number of other actions which support the continued development and implementation of a centers-based transit network. These actions are identified below:

General Actions:

1. Undertake activities at the Federal, State, and Local levels that create and establish new revenue sources which provide additional funding for expanded transit capital and operational requirements.

2. Undertake activities which complete and implement the identified Inter-City, Commuter and Metro Rail programs to meet Mobility Plan goals and Air Quality Plan attainment.
3. Identify and prioritized the long & short-range transit implementation phasing along corridors and at the activity center level.
4. Meet "Project Milestones" for full accessibility as identified in approved implementation plans mandated and required in the AD Act, 1991.

Transit Program Actions:

1. Identify and prioritized service requirements to Regional Activity Centers, Sub-centers and major attractor/generators at the Sub-regional level with specific focus on local distribution and connectivity to Intra-regional network.
2. Identify local/sub-regional transit service requirements to support and maximize access, egress and distribution with the emerging Rail Systems.
3. Define transit service requirements to support and use the emerging Transitway and HOV network. Specific focus onto integration with the other Intra-regional networks/facilities.
4. Identify transit service requirements to support and use existing and future Park-N-Ride Facilities. Specific focus on impacts to sub-regional and Intra-regional service.
5. Develop transit service requirements for the emerging Arterial HOV/Transitway facilities.
6. Identify, prioritized, establish financial costs and revenue sources required for Annual Operations, Capital Equipment and Support Facilities .
7. Identify relationship between Level-of-Service and route structures to attraction of existing & potential transit markets (user groups, present/future land use, facilities).
8. Develop and implement demand management strategy programs to meet activity center & sub-regional AVO and VMT reduction goals and regional air quality and transportation goals.

RECOMMENDED POLICIES

The RME Transit Sub-group developed a number of recommended policies which are designed to support the development and implementation of a multi-modal centers-based transit system. As part of the development process, the recommended policies were presented to the other RME sub-groups, SCAG's Transit Advisory Committee, SCAG's Transportation and Communication Committee and Executive Committee.

Public transportation programs should be considered an essential public service because of their social, economic, and environmental benefits.

Implementation of new transit service or improvements in existing & expanded transit should be supportive of the Centers-Based Transit Network concept.

Specific service types, levels and configuration should be determined by the local transit providers, transit users, local jurisdictions and applicable county transportation commissions.

- Public transit services shall be designed to provide the maximum availability at times convenient for use.
- Public transit services shall be designed to be available to for use without impediments.
- Public transit services should be designed to provide maximum user utility.
- New and expansion transit programs which are designed to meet the objectives of Transportation Control Measures contained in the AQMP shall receive priority for funding.
- Local funding resources for transit should be used to leverage all available Federal Funding sources as applicable.
- All existing and new public transit services, facilities and/or systems shall be fully accessible to persons with disabilities as defined, mandated, and required under the applicable Titles and Sections of the Americans With Disabilities Act, 1990 and the Rehabilitation Act, 1974.
- All existing and new public transit services shall be provided in a manner which does not preclude use on the basis race, color and/or national origin as defined, mandated and required under Title 6 of the Civil Rights Act, 1964.

- All existing and new public transit services, facilities and/or systems shall evaluate the potential for private sector participation through the use of competitive procurement based on Fully Allocated Costing methodologies.

CHAPTER FIVE: REGIONAL STREETS AND HIGHWAYS PROGRAM

INTRODUCTION

The Regional Streets and Highways chapter is comprised of the freeways, High-Occupancy Vehicle (HOV) facilities, toll roads, and identified regionally significant arterials in the region. Major planning, funding and/or operational improvement programs that apply to the network include the Intermodal Surface Transportation Efficiency Act (ISTEA), National Highway System (NHS), and Congestion Management System (CMS), five SCAG region Congestion Management Programs, the Caltrans Transportation System Management Program, the SCAG System of Regional Significance, the Los Angeles County and Orange County SMART Corridor/Superstreets programs, local government general plans, and other local programs. The 13 SCAG subregions also provided substantial input in the development of the Regional Streets and Highways program. Figure 5-1 shows the SCAG region highway system.

In addition to the Constrained Alternative for mobility as related to roadways, the chapter contains a status report on the changes to the freeways and highways since 1989 followed by a description of 1990 travel conditions. Policies for the roadway program are also discussed. New to this chapter are discussions of opportunities for advanced technology and arterial high-occupancy vehicles facilities which could benefit the region in the quest to attain mobility goals.

Mobility strategies contained in this RME chapter have potential for being integrated into the applicable air quality management plans for the air basins in the region. Further discussion of the TCMs can be found in Chapter 11, Regional Transportation Control Measure (TCM) Programs.

IMPLEMENTATION STATUS OF THE REGIONAL STREETS AND HIGHWAYS PROGRAM

The implementation status of the Regional Streets and Highways program is a partial reflection of the degree of funding available to local and state governments for implementing the recommended projects. Since 1989, jurisdictions within the region have obtained new funding sources, that apply to the regional streets and highways. Changes in funding sources include local sales tax propositions¹, the Intermodal Surface Transportation Efficiency Act (ISTEA), and State Highway Programs.

¹ Ventura County has not adopted a sales tax measure for transportation.

Status of Recommended State Highway and Freeway System Improvements

Mixed-Flow Highway/Freeway: (1) A connection between I-15 and Route 91 was completed in June 1989. (2) The I-105 Freeway opened in October 1993. (3) The Environmental Impact Statement of the I-710 gap closure project is in the approval process² and Route 30 is on target to begin in 1996 with a completion date of 2003. (4) Improvements on Route 86 in Imperial County have progressed.

SCAG included an extensive network of HOV lanes in the 1989 Regional Mobility Plan (RMP). Approximately 1,100 centerline miles of network were identified covering an extensive part of the freeway network. It was recognized that HOV lanes provide significant time savings incentives to form carpools and vanpools that relieve congestion, improve mobility, and assist in achieving improved air quality. In addition, a number of HOV facilities were identified as part of an improved transit system, providing exclusive right-of-way for express bus service, with in some cases, on-line stations, transportation centers, and Park-And-Ride facilities.

High-Occupancy Vehicle (HOV) program: (1) New HOV facilities have opened on segments of Interstate 5, 405 and Route 57 in Orange County, Interstates 105 and 405 in Los Angeles County and a segment of Route 91 in Riverside County. (2) The Interstate 10 El Monte Busway was extended into the Los Angeles Central Business District. (3) Several hundred miles of HOV lanes are currently under construction on portions of Route 210, the 110 Busway, Route 91, and Route 405 (through the interchange I-105). Additional HOV lanes will be constructed on almost all metropolitan freeways by 2010.

Status of Arterial HOV Program

HOV lanes are planned for construction on most of the congested segments of the regional freeway network by 2010. While these facilities will assist in reducing congestion on the freeway system, congestion on many of the streets and roads classified as arterials (both principal and minor) will become more severe. Although the 1989 RMP did not contain an arterial HOV program, many of the same measures that have been used to improve traffic flow on the freeway system have application to the region's arterial system. For example, HOV lanes—both for automobiles and public transit vehicles—on the congested non-freeway arterials can provide some relief.

² A recent court decision has indicated that approval of all local jurisdictions is required before a freeway can be constructed. If this decision is affirmed by higher courts, the opposition to the recommended route by South Pasadena could effectively block completion of the Route 710 gap.

Arterial HOV lanes are designed to give preference and time savings to transit or carpools on arterial streets. The availability of an exclusive lane for transit buses reduces conflicts with mixed-flow traffic resulting in faster running times, reduced operating costs, lower bus emissions, and improved passenger attraction. The use of arterial HOV lanes is consistent with policies that encourage maximizing people-carrying capacity.

Arterial HOV lanes may be placed on one-way streets, two-way streets with simple re-striping, in separate rights-of-way. They may be contra-flow (against the flow of traffic), concurrent flow (with the flow of traffic), or transit mall (reserved exclusively for the use of transit vehicles). Consideration should be given to the volume of transit patronage and carpool users, the number of vehicles to be operated, the degree of conflict with mixed-flow traffic, and the general suitability of adjacent land uses and access needs, when developing arterial HOV lanes. Arterial HOV lanes may also be considered in potential high-density transit corridors where rail improvements may not be viable due to high cost or lack of right-of-way.

Two selection criteria, congestion duration and potential for improved transit operations make the HOV lanes effective in terms of performance measures, but also in the social and political sense of being visibly productive. The low costs of arterial HOV lanes and the potential for tangible operating costs savings and emission reductions from buses make implementation and measurement of immediate results possible.

Arterial HOV Facilities. In downtown Los Angeles, a contra-flow bus lane expedites northbound public transit vehicle traffic on Spring Street. The Spring Street lane is only available to public transportation vehicles.

Status of Recommended Local Streets and Roads System Improvements

Capital improvements to the local streets and roads system were accomplished primarily through the Capital Improvement Programs of the region's CMPs, through the local sales tax measures and via city and county budgets.

Status of Recommended Transportation System Management Improvements

Jurisdictions within the SCAG region have implemented several of the TSM projects recommended in the 1989 Plan. Completed projects include signal synchronization, computerized signal systems, installation of ramp meters, and intersection improvements. The status of the TSM program can be found in the Appendix G of this document.

Status of Toll Roads

California highways, with some notable exceptions such as scenic drives on the Monterey Peninsula, have historically been toll-free. California statute does permit establishment of bridge districts and these districts have been able to construct facilities on the state highway system that charge tolls. In the SCAG region, the Vincent Thomas Bridge (between San Pedro and Terminal Island, on State Route 47), charges a toll for crossing.

Recognizing an era of limited resources yet desirous of mitigating congestion through enhanced capacity, the state has enacted legislation that would permit public funds to be used to build conventional highways that would charge tolls for use. In the SCAG region, there are currently four toll projects: a parallel route to existing Route 91 between Orange and Riverside Counties, and four facilities within Orange County; an extension of Route 73 through the San Joaquin Hills; Route 241, known as the Eastern Corridor; and Route 231, known as the Foothill Corridor. The status of the projects is shown in Table 5-1. Three miles of the Foothill Tollway opened in October 1993.

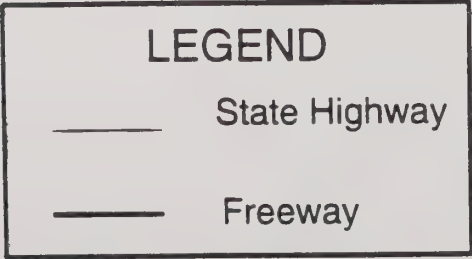
TABLE 5-1
STATUS OF THE TOLL ROAD PROJECTS

Route	Status
Route 91	Final Design.
Route 73 (San Joaquin)	EIR certified, EIS ROD adopted, 100% financing obtained, project in final design.
Route 241/261 (Eastern)	EIR certified, Final EIS pending.
Route 231 (Foothill)	Construction started on 7 miles of Foothill North with 3 miles opened in October 1993, EIR certified on Foothill South.

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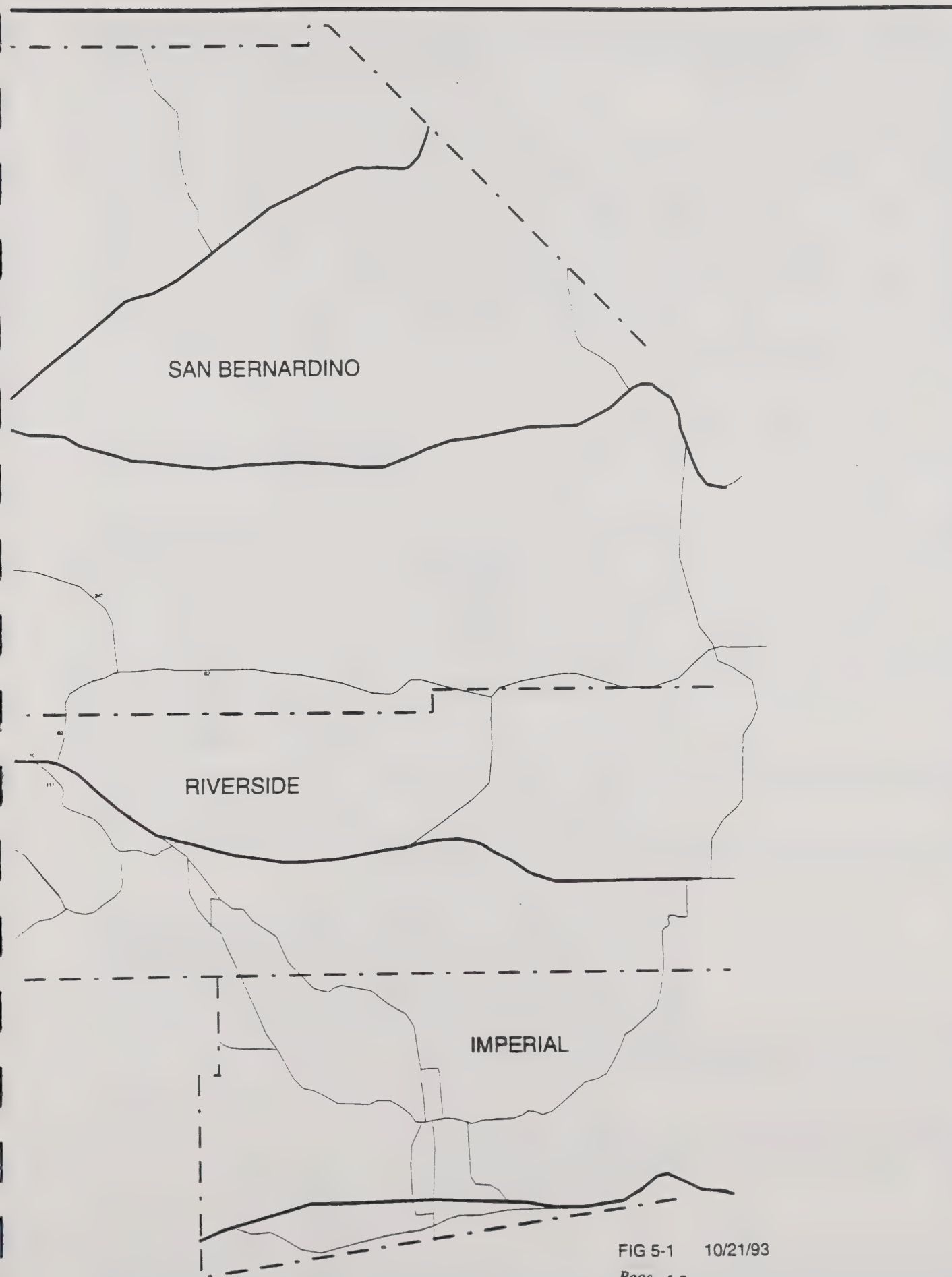
SCAG REGIONAL HIGHWAY SYSTEM

1993 RME DRAFT



Source: CALTRANS





SAN BERNARDINO

RIVERSIDE

IMPERIAL

FIG 5-1 10/21/93

Page 5-7

EXISTING (1990) REGIONAL SYSTEM OPERATING CONDITIONS

Table 5-2 summarizes major performance indicators for the 1990 regional transportation system. The system supported a tremendous amount of trips on a daily basis and the dominant mode was solo-driving (75.6 percent). In 1990, the daily person trips and vehicle trips were 48.9 million and 34.3 million, respectively, yielding an average daily VMT of 283.8 million. As a consequence, the average speed on the regional transportation system was only about 31.8 miles per hour although about half of these trips took place on the region's extensive freeway system. The total daily hours of delay amounted to 1.5 million hours.

TABLE 5-2
SUMMARY OF PERFORMANCE INDICATORS
FOR 1990 REGIONAL SYSTEM

Performance Indicators		1990
Daily Person Trips		48,867,000
Daily Vehicle Trips		34,321,000
Daily VMT		283,776,000
Mode Split (HBW)	Alone	75.6%
	Shared	18.8%
	Transit	5.58%
Average Speed		31.8
Daily Hours Delay		1,527,000

Source: 1990 Validation of the Regional Transportation Model, March 1993

The poor operating status of the regional transportation system in 1990 is also demonstrated by traditional measures of roadway system performance, the level of service (LOS). A substantial portion of the region's freeway system experienced major congestion, especially around major activity centers (See Figure 2-2 in Chapter 2, Executive Summary, 1990 levels of service on the regional system).

FRAMEWORK FOR DEVELOPING THE REGIONAL STREETS AND HIGHWAYS PROGRAM

The Regional Streets and Highways program was developed in such a way to support regional goal attainment. The program supports alternatives to the SOV; it considers freight transportation and its links to the economy, and system operation. Moreover, it recognizes the critical issues related to the region's almost complete dependence on fossil fuels for mobility. These issues are addressed through provision of Park-And-Ride lots and HOV facilities that directly link activity centers and areas. The centers concept embraces the provision of transit and access via other modes such as walking and bicycling. System continuity, improved system operation, and enhanced fuel efficiencies are addressed by gap closures and technology.

Regional Streets and Highways Program Development

- Broaden the role of local arterial roadways in achieving mobility objectives.
- Employ greater use of Smart Corridors, Superstreets, and technology.
- Expand use of transportation system management.
- Support transit through provision of freeway HOV facilities, and Park-And-Ride lots.
- Develop arterial HOV facilities to support transit.
- Use market pricing where appropriate as a strategy to achieve regional goals and objectives.

Specific policies were formulated in the following areas: freeway, HOV and toll facility development, arterial HOV facilities, Smart Corridors, Superstreets, and TSM.

POLICIES

Freeway and HOV Facilities

- HOV facilities shall be constructed and operated to encourage use of public and private transit, carpools, vanpools and other HOV.
- In addition to increasing occupancy thresholds on HOV facilities, consideration should be given to additional or expanded HOV capacity in the corridor.

- Alternative modes and projects shall be developed and implemented where implementation of HOV element projects is demonstrated to be unfeasible due to widespread local opposition.
- HOV lanes shall be provided for in new facility construction and for capacity enhancements of existing facilities in accordance with the HOV program.

Toll Facilities

- Toll facilities shall be designed, operated, and priced to encourage use of public and private transit, carpools, vanpools, and other HOV. AVO of the toll facilities shall be comparable to similar HOV facilities.
- Pricing policies may be applied to maintain appropriate levels of service on facilities.

Arterial HOV Facilities

- Necessary steps to develop and implement arterial HOV facilities in support of transit and rideshare activities shall be initiated.

Smart Corridors and Superstreets

- Necessary steps to develop and implement Smart Corridors and Superstreets to achieve regional mobility objectives shall be initiated.

Transportation System Management

- Expanded transportation system management by local jurisdictions will be encouraged.
- The development and application of management systems by local jurisdictions as a means to optimize the expenditure of scarce maintenance, operating and capital funds should be supported.
- New transportation infrastructure will incorporate advanced system technologies, where appropriate.
- TSM activities throughout the region shall be coordinated among jurisdictions.
- Methods to improve safety and reduce incidents on the regional transportation system should be considered.

SUBREGIONAL INPUT

Subregional input, as a part of this bottom-up planning process, is comprised of significant issues of concern as they relate to regional streets and highways. Tables 5-3 and 5-4 depicts subregional input as related to the regional program.

TABLE 5-3
SUBREGIONALLY RECOMMENDED IMPLEMENTATION PROGRAM

Subregion	Program	Status	Recommendation
Imperial County Association of Governments	Highway	<ul style="list-style-type: none"> Caltrans will build SR-7 north from the new Port of Entry to connect with east-west SR-98 located about a mile north of the Port of Entry boundary. Strong local interest exists to extend SR-7 north from SR-98 to connect with I-8. 	<ul style="list-style-type: none"> Recognizing the new East Port of Entry and support for federal funding to expedite solutions to transportation problems in the vicinity of the new Port of Entry, namely the widening of SR-98 and the extension of SR-7 to I-8. Continuing sensitivity to Imperial County's unique planning considerations. Work with Caltrans and Imperial County to provide a more detailed county transportation plan, which highlights the future regional transportation projects.
Arroyo Verdugo	Advanced Technology	N/A	<ul style="list-style-type: none"> Goals & Objectives: Explore and encourage new transportation technologies that will improve safety and efficiency and provide clean fuel alternatives for all transportation modes.
Arroyo Verdugo	CMP	N/A	<ul style="list-style-type: none"> Goals & Objectives: Ensure a transportation network that is consistent with federal and state clean air and congestion management requirements and mandates.
Arroyo Verdugo	HOV	<ul style="list-style-type: none"> The 2010 projected traffic conditions for all corridors in the Arroyo Verdugo Subregion will worsen over existing conditions. 	<ul style="list-style-type: none"> Incorporate HOV lanes on appropriate freeway corridors and enhance access.
Arroyo Verdugo	TSM	<ul style="list-style-type: none"> Operational programs provide unique opportunities for interagency coordination, whereby the cities of the Arroyo-Verdugo Subregion can address both regional and local mobility and clear air goals. 	<ul style="list-style-type: none"> Improve signing and ramps from the eastbound I-134 Freeway to the northbound freeway to improve connection between Ventura and Golden State freeways. Accelerate TSM projects as short-term, low cost congestion relief measures.
Arroyo Verdugo	Highway	<ul style="list-style-type: none"> By the year 2010, the I-5, I-134, I-210 freeways and Rte. 2 will experience during the three hour afternoon peak period. 	N/A
Western Riverside Council of Governments	TSM/TDM	N/A	<ul style="list-style-type: none"> Goal: Maximize the efficient use of the circulation system and minimize congestion through the use of TSM and TDM strategies. Objective: Implement TSM measures to reduce congestion and optimize the operations of the roadway system.

Subregion	Program	Status	Recommendation
Western Riverside Council of Governments	Highway	<ul style="list-style-type: none"> ●SR-91 through Corona and Ortega Highway (SR-74) has some of the highest future congestion levels in the subregion. ●I-15 between SR-91 and SR-74, the I-15 Freeway is projected to be significantly over capacity. ●SR-60 Corridor- the forecasts indicate high levels of congestion on the 60 freeway from the San Bernardino County line on the west to its split with I-215 in Moreno Valley. ●North-South Corridor to San Bernardino County - The roads linking Moreno Valley and Calimesa with San Bernardino County to the north are projected to experience significant congestion. ●Gilman Springs Corridor - This link between San Jacinto and Moreno Valley is projected to experience significant congestion, particularly between Jack Rabbit Trail and Alessandro Blvd. ●Route 79 South - This segment of Route 79, which follows Winchester RD. through Murrieta and Temecula, is particularly a problem between I-15 and Murrieta Hot Springs Rd. 	<ul style="list-style-type: none"> ●Goal: Support completion of an adequate roadway system which provides for the safe and efficient movement of people and goods in rural and developing areas. ●Objective: Encourage the preservation of rights-of-way for future transportation facilities. ●Objective: Complete the planned subregional roadway system. ●Objective: Maintain acceptable levels of service on the subregional network. ●Objective: Complete gaps in the State highway network.
San Bernardino Associated Governments	N/A	N/A	N/A
Southeast Los Angeles County Subregion	Highway	The Southeast Los Angeles County subregion has important functions related to basic industry, general transportation, goods movement and world trade.	<ul style="list-style-type: none"> ●Cooperatively identify within SELAC a surface arterial system and implementation program that reflects current transportation elements of local general plans as the basis for influencing the SCAG Regional Comprehensive Plan. ●Work within the SELAC area or appropriate subareas within it to establish consensus on priorities for principal arterial highway development (such as Pacific Coast Highway, Firestone, Imperial, and Florence Avenues for east/west access, and Rosemead, Lakewood, Whittier, and Washington Boulevards for north/south access). ●Work with SCAG and MTA to facilitate arterial and transit linkage improvements by closely interfacing with existing modes of transportation(buses, etc.) within the Subregion. ●Work with MTA to improve access to the existing regional transportation system in specific areas identified by affected Cities to benefit SELAC communities. ●Study and make recommendations on methods and locations to improve the arterial system to increase accessibility to transit systems throughout the Subregion, taking advantage of research and data already completed on this subject.

Subregion	Program	Status	Recommendation
Southeast Los Angeles County Subregion	Advanced Technology	N/A	<ul style="list-style-type: none"> • Continue to improve and expand existing modes and initiate pilot studies in selected areas to test feasibility and cost effectiveness of new technological approaches which avoid building substantial new infrastructure. • Support policies that further new technologies such as telecommuting, electric vehicles and alternative fuels in the Regional Comprehensive Plan.
South Bay Cities Association	Highway	N/A	<ul style="list-style-type: none"> • Improve key transportation corridors and facilities identified by subregions. • Improve key links in the arterial highway system identified by subregions, both in terms of capacity and operational improvements.
South Bay Cities Association	Advanced Technology	N/A	<ul style="list-style-type: none"> • Provide for the testing and evaluation of new technologies to reduce travel demand, increase system capacity, improve operations and achieve cost effective information to users of the transportation system. • Policies: Pursue new technologies to reduce travel demand, increase capacity, improve operations, and provide information to drivers and transit passengers.
South Bay Cities Association	TSM	N/A	<ul style="list-style-type: none"> • Policies: Implement significant improvements on existing arterials and primary corridors within the Subregion. Improvements which increase the efficiency of the current system (e.g. signal synchronization) are particularly important.
North Los Angeles County Subregion	Highway	<ul style="list-style-type: none"> • The North Los Angeles County subregion considers SR 138 as high priority with potential for encouraging economic development. Also, serving as a bypass of the Los Angeles Basin. 	<ul style="list-style-type: none"> • Goals/Policies: Facilitate the implementation of major transportation improvement projects on the regional freeway and local arterial system. • Goals/Policies: Implement new east-west by-pass in Santa Clarita Planning Area. • Goals/Policies: Implement new east-west by-pass in the northern portion of the subregion. • Goals/Policies: Implement critical Circulation Element improvements from local General Plans. • Goals/Policies: Optimize the operating efficiency of existing and future transportation systems. Goals/Policies: Ensure subregional input is considered in planning and funding allocations for transportation improvements.
Ventura Council of Governments	N/A	N/A	N/A
Coachella Valley Association of Governments	Highway	N/A	Regional Arterial Program
City of Los Angeles	Toll Facilities	<ul style="list-style-type: none"> • Pricing the use of the transportation system (e.g. toll roads) may be a good tool to reduce congestion. This should not be implemented solely as a revenue generating source for other uses but as a source of funding the system for which fees are collected. Pricing of such facilities should be based also on car occupancy. 	N/A

Subregion	Program	Status	Recommendation
City of Los Angeles	Advanced Technology	<ul style="list-style-type: none"> •The Subregion favor high-technology solutions that enhance the carrying capacity (mobility) of existing facilities such solutions include ATSAC, SMART Corridor, and IVHS. 	N/A
San Gabriel Valley	Highway	<ul style="list-style-type: none"> •A HOV lane is being developed along the I-210. •Environmental review, clearance and design efforts for the Foothill Freeway (Route 30) and Long Beach Freeway (I-710) gap closures and upgrade of the 4-lane Corona Expressway (Route 71) to a full freeway are in progress. •Proposed HOV lanes on the Pomona Freeway (SR 60) between SR 57 and the San Bernardino County line and on SR 57 from SR 60 to the Orange County line. •Extension of the El Monte Busway from its current terminus in the City of El Monte easterly to the San Bernardino County line. 	<ul style="list-style-type: none"> •Facilitate the implementation of all San Gabriel Valley projects programmed in the state and local Highway Element of the Regional Transportation Improvement Programs for Fiscal Years 1993-1999. •Complete the environmental review, design, and programming of funds for Rte. 30 and I-710 gap closures to the satisfaction of the affected cities. •Continue multi-jurisdictional cooperation in Valleywide signal synchronization projects, including Main Street/Las Tunas/Arrow Highway, Fremont, Atlantic, Garfield, Huntington Drive and other major projects. •Identify, evaluate, prioritize and support, through multi-jurisdictional cooperation in the Valley, the most effective subregional projects such as: the Rte. 71 improvement to upgrade the expressway to a full freeway; Route 60/57 interchange improvements; "Smart Corridors" on Rte. 60, 10, and 210; Baseline Road improvements including realignment and widening from Foothill Blvd. to the San Bernardino County line; Valley Blvd. capacity enhancement projects between Route 710 and Santa Anita Ave.; Bridge widenings across the I-605 Freeway. •Complete the implementation of HOV lanes along Foothill I-210 Freeway. •Design and extend El Monte Busway (Route 10 HOV) to San Bernardino County Line. •Pursue development of HOV lanes along Rte. 134, Rte. 60 and I-605 Freeways. •Support the implementation of multi-county HOV projects on Rte. 57, Rte. 60, and Rte. 30. •Identify, evaluate, prioritize and support, through multi-jurisdictional cooperation in the Valley.
Orange County	N/A	N/A	N/A
Westside Summit Cities	Highways	<ul style="list-style-type: none"> •CMP. Numerous traffic and transportation studies of the streets and highways system have been completed in the Westside cities over the past several years. The State highways and principal arterials included in the CMP system on the Westside include: Pacific Coast Highway (SR 1), Lincoln Blvd/Santa Monica Blvd. (SR 2), Santa Monica Freeway (I-10), Marina Fwy. (SR 90), San Diego Freeway (I-405), Venice Blvd. (SR 187), Wilshire Blvd from Ocean Ave. to the Harbor Fwy (SR 110), and La Cienega Blvd. from I-405 to I-10. 	<ul style="list-style-type: none"> •Continue pursuing improved capacity of existing arterials through such programs as "smart corridors" and signal systems. •Identify a surface arterial system and implementation program that reflects current transportation elements of local general plans as the basis for influencing the SCAG Regional Comprehensive Plan. •Work with the City and County of Los Angeles to establish consensus on priorities for improving principal arterials that link the cities. •Work with SCAG and MTA to facilitate arterial/transit linkage improvements, particularly buses. •Work with MTA to improve access to the existing regional transportation system in specific areas identified by affected cities to benefit the Westside cities. •Study and make recommendations on methods and locations to improve the arterial system to increase accessibility to transit systems throughout subregion. •Identify all available funding opportunities for arterial improvements.

**TABLE 5-4
SCAG REGION SUBAREA INPUT**

Subarea	Program	Status	Recommendation
The Four Corners Transportation Study	Highway	<ul style="list-style-type: none"> ● Imperial Hwy. The planned improvements for Imperial Highway include the upgrade of Imperial to a Super Street (recently renamed "Smart Street" by OCTA) from the LA County line to Santa Ana Canyon Road. The short-term improvements include the widening of Imperial to six-lanes, with related intersection improvements. The long-term plan is to widen Imperial to eight lanes. ● SR-57. The improvements planned for SR-57 involve the addition of one high occupancy vehicle (HOV) lane in each direction from Lambert Road in Orange County to the I-10/I-210 interchange in Los Angeles County. ● SR-71. The planned improvements involve the upgrade of SR-71, and construction of related improvements, from I-10 in Los Angeles County to SR-91 in Riverside County, including the interchange improvements at SR-71 and SR-60. The Final Environmental Impact Statement-Improvements to SR-71 between I-10 and SR-91 indicates that the preferred alternative is a six-to eight-lane freeway. ● SR-60. The project involves widening SR-60 for HOV lanes additions in LA County, with an expanded extension to I-710, and from the LA/San Bernardino County line to the San Bernardino/Riverside County line in San Bernardino County. ● I-10. The project involves the addition of HOV lanes from I-5 to the LA/SB County line and from I-5 to I-405. Both projects are identified in the LACTC 30-year fundable plan. The addition of two HOV lanes is also planned for I-10 from the LA County line to Route 83 and from Route 83 to Route 15 in San Bernardino. ● Carbon Canyon Rd. (Route 142)/Soquel Canyon/Tonner Canyon. The project involves the widening of one or more of the three roads. ● SR-91. The project involves the widening of SR-91 to add HOV lanes. 	N/A

RECOMMENDED REGIONAL STREETS AND HIGHWAYS PROGRAM

The program recommends capacity expansions, enhanced system management, and feasibility studies to be implemented by the CTCs, the Transportation Corridor Agencies (TCAs), Caltrans and local jurisdictions. The seven-year Capital Improvement Programs of the 1992 Congestion Management Programs were found to be consistent with the 1989 RMP and compatible with adjacent county(ies) CMPs. As such, the CMPs were incorporated into the Action Element of the RME as authorized by CMP legislation.

Capacity Expansions

Figure 5-2 shows the proposed mixed-flow capacity expansion projects to be implemented as a part of the Constrained Alternative. Figure 5-3 shows proposed HOV capacity expansion projects included in the alternative. For reference purposes, existing HOV lanes are also shown on Figure 5-3.

In total, 2,770 additional lane miles of mixed-flow and HOV capacity are proposed. *Table 5-5* shows the breakdown of total mixed-flow and HOV lane mileage to be added by location within the region. Of the 2,770 additional lane miles, mixed-flow freeway capacity expansions comprise 55 percent (1,527 lane miles) while expansions for HOV comprise 45 percent (1,243 lane miles).

TABLE 5-5
TOTAL MIXED-FLOW & HOV LANE
MILES ADDED BY COUNTY 1990 - 2010

County	Total Added Lane Miles by County	Mixed-Flow Lane Miles	% of Total	HOV Lane Miles	% of Total
Imperial	137	137	100	0	0
Los Angeles	1,031	223	22	808	78
Orange	800	601	75	199	25
San Bernardino	390	269	69	121	31
Riverside	327	212	65	115	35
Ventura	85	85	100	0	0
Total	2,770	1,527	55	1,243	45

Source: 1993 RME Constrained Project 1990 - 2010

Note: Includes new facilities, widening of existing facilities and toll roads.

PROPOSED MIXED FLOW PROJECTS 1993 RME DRAFT

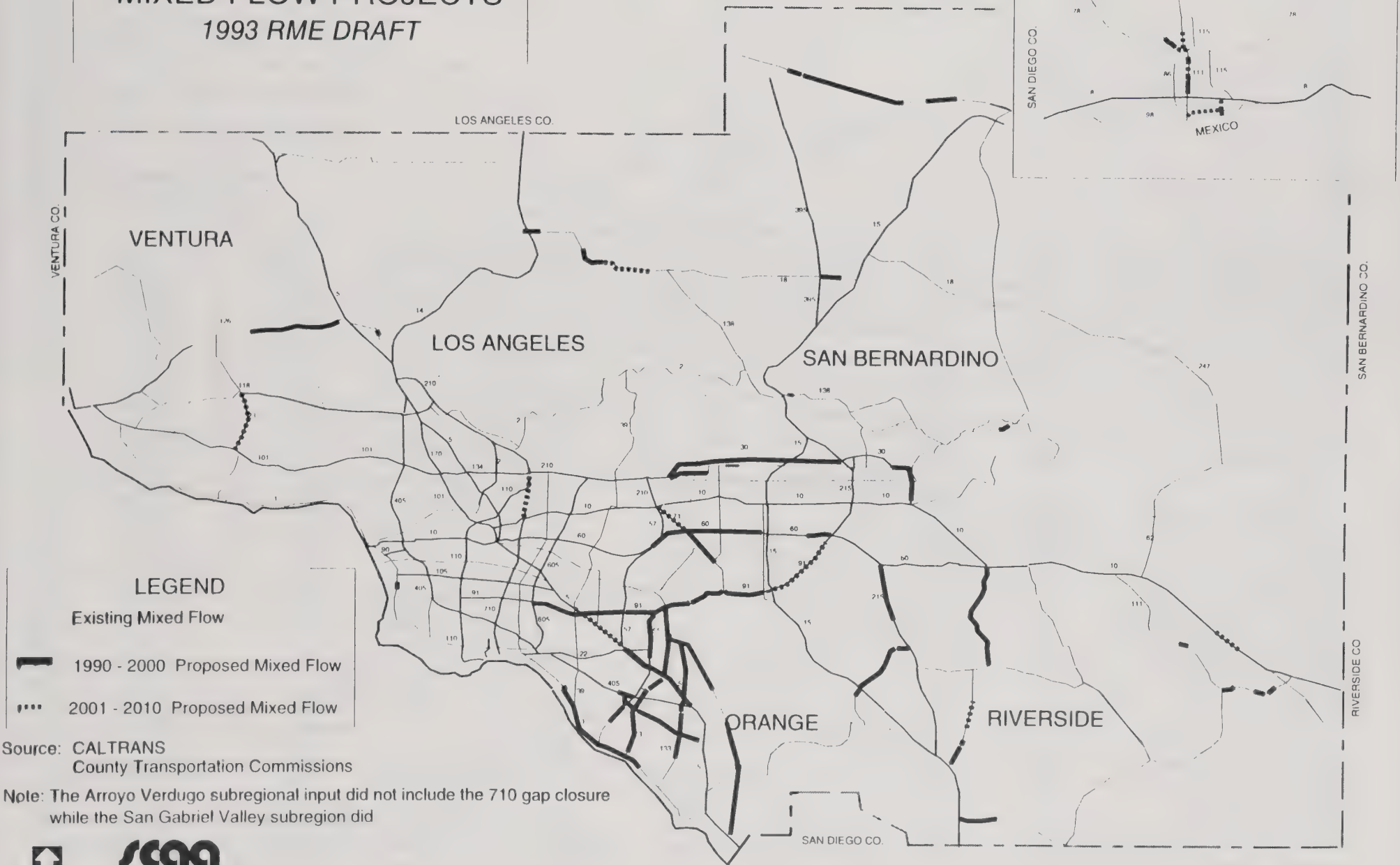
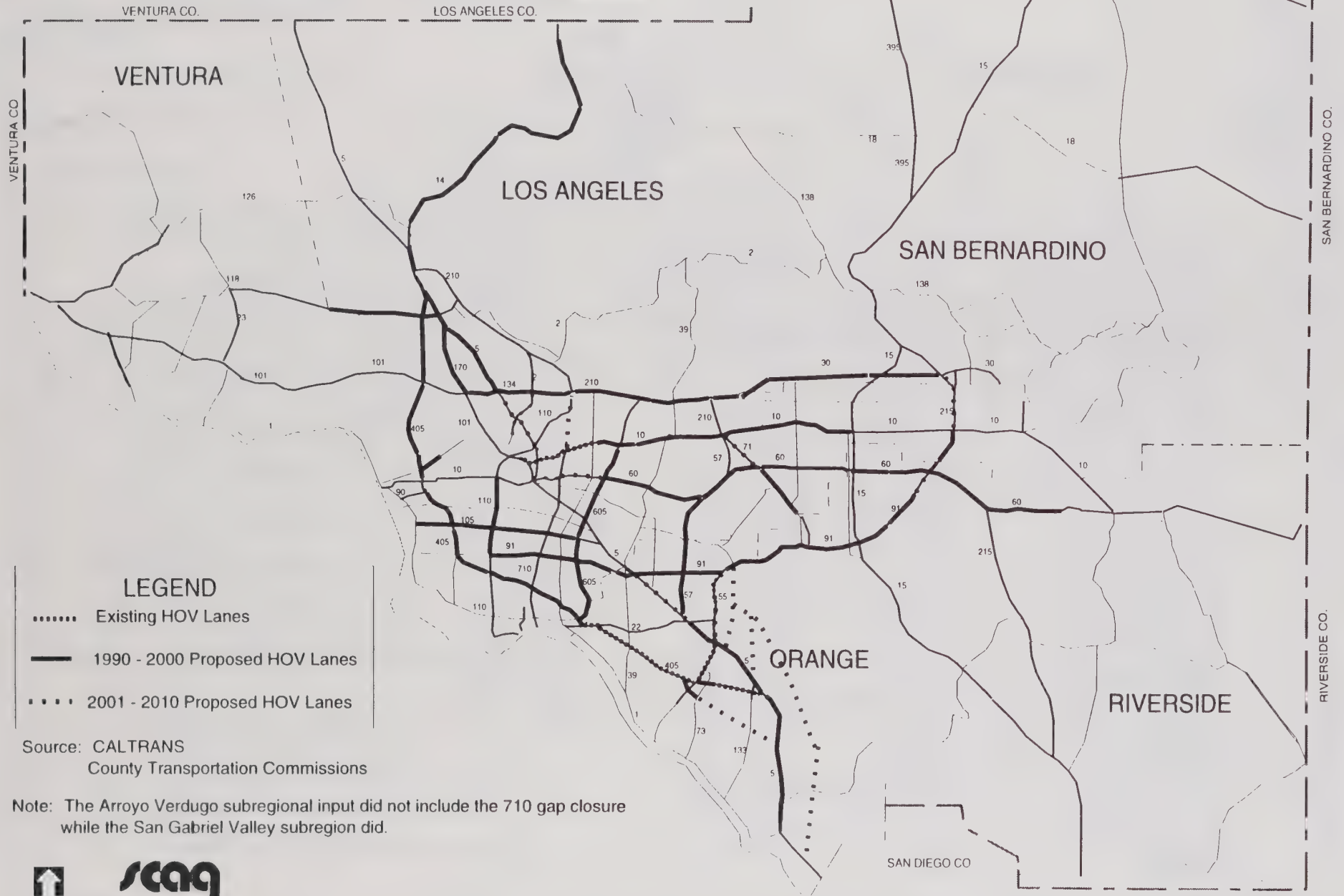


FIG. 5-2 12/2/93

1990 EXISTING AND PROPOSED HIGH-OCCUPANCY VEHICLE LANES 1993 RME DRAFT



Expansions due to new facility construction and widening of existing facilities. Table 5-6 shows the breakdown of capacity expansions by improvement type. The construction of new facilities will add 957 miles of capacity. Of the new facility mileage, approximately 75 percent will serve mixed-flow traffic while, 25 percent will be HOV only. Existing facilities will be expanded by 1,813 lane miles. Of this total, 56 percent will be HOV while 44 percent will be mixed-flow.

TABLE 5-6
PROPOSED CAPACITY EXPANSIONS BY IMPROVEMENT
TYPE
1990-2010

County	Mixed-Flow (lane miles)			HOV (lane miles)		
	Construction of New Facilities	Additions to Existing Facilities	Total	Construction of New Facilities	Additions to Existing Facilities	Total
Imperial	34	103	137	0	0	0
Los Angeles	28	195	223	28	780	808
Orange	466	135	601	146	53	199
Riverside	0	212	212	0	115	115
San Bernardino	184	85	269	62	59	121
Ventura	9	76	85	0	0	0
Total	721	806	1527	236	1007	1243

Source: 1993 RME Constrained Project

Freeway HOV. Discussions with Caltrans, county transportation commissions and transit operators indicate a continued support for HOV lanes as a mobility strategy for the region. Additional HOV lanes have been identified and commitments to building routes identified in the 1989 RMP are filling new identified demands. Connections between segments of the HOV system also need to be developed, including the creation of direct HOV ramp connectors where costs and conditions warrant. The reasonably funded infrastructure actions in the RME maintain the commitment to completion of the freeway HOV system.

Long-range Freeway-Based HOV Expansion. HOV expansion is recommended on portions of the Interstates 5, 10, 15, 215, and Route 101 beyond 2010.

Local Streets and Roads Improvements

The projects that specifically pertain to the local streets and roadways in the CMP CIPs are recommended as the local streets and roads improvement program. Table 5-7 summarizes the seven-year CIP

projects of the 1992 CMPs by the type of improvement. A total of \$1.93 billion will be spent, (44.7 percent), will be spent on CMP local streets improvements.

Subregions have also developed arterial street programs that serve local and in some cases, regional travel. Through its Regional Arterial Program, Coachella Valley acknowledges that regional transportation issues have been and will continue to be a primary concern in efforts to relieve congestion and provide subregional mobility. The Coachella Valley Area Transportation Study (CVATS) identifies street and highway needs through the year 2010. Mechanisms to fund these programs include Coachella Valley portions of Riverside County's Measure A sales tax and a Transportation Uniform Mitigation Fee (TUMF). Forty percent of Coachella Valley's share of Measure A is estimated to generate approximately \$126 million during its 20-year life. The Expenditure Plan links the implementation of a TUMF to the Regional Arterial portion of the sales tax measure.

Of the \$800 million system identified by the CVATS, approximately \$590 million worth are approved as "Regional Arterials". The projects include seven new or improved freeway interchanges, six new or improved railroad crossing south of I-10, twelve new or improved bridges across the Whitewater River, twenty new or improved major arterials including the proposed Midvalley Parkway, and eleven new or improved bridges over other channels.

**TABLE 5-7
SUMMARY OF CMP CIP PROJECTS**

COUNTY	TYPE OF IMPROVEMENT	COST OF IMPROVEMENT (million dollars)	
		Highways and Local Streets	Local Streets Only
LOS ANGELES	Capacity Enhancement	178.0	8.9
	System Management	68.6	7.8
	Other	44.1	0.0
ORANGE	Capacity Enhancement	712.2	700.9
	System Management	511.4	260.3
	Other	31.0	31.0
RIVERSIDE	Capacity Enhancement	36.2	6.0
	System Management	23.1	3.8
	Other	12.0	7.6
SAN BERNARDINO	Capacity Enhancement	1,682.7	278.7
	System Management	621.2	522.2
	Other	90.0	86.1
VENTURA	Capacity Enhancement	57.0	6.0
	System Management	249.5	3.8
	Other	0.0	7.6
SUB-TOTAL	Capacity Enhancement	2,666.0	1,000.5
	System Management	1,474.0	797.9
	Other	177.0	132.3
TOTAL		\$4,317.0	\$1,930.7

Sources: 1. San Bernardino Association of Governments, Congestion Management Program for San Bernardino County, November 1992
 2. Los Angeles County Metropolitan Transportation Authority, Congestion Management Program for Los Angeles County, December 1992
 3. Riverside County Transportation Commission, Congestion Management Program for Riverside County, December 1992
 4. Orange County Transportation Authority, Congestion Management Program for Orange County, December 1992
 5. Ventura County Transportation Commission, Congestion Management Program for Ventura County, December 1992

Arterial HOV Lane Opportunities. Exclusive arterial lanes to support transit operations or as facility components of projects such as the Santa Monica Boulevard Corridor, offer improvements in mobility through improvements in transit reliability, speed, safety, and operating efficiency. Further, some evidence suggests reduced congestion conflicts can improve the emissions from transit buses and improving air quality. The RME recommends the development of arterial HOV lanes where opportunities with appropriate conditions can result in improved transit operations, or can encourage shared rides through time savings to users.

Nine potential arterial HOV candidate corridors have been identified for the purposes of modeling and to determine their potential in achieving mobility objectives.

1. Olive Street: from Olympic Boulevard to Fourth Street.
2. Hill Street: from Olympic Boulevard to Temple Street.
3. Broadway: from Olympic Boulevard to Temple Street.
4. Vermont Avenue: from Exposition to Santa Monica Boulevard.
5. Santa Monica Boulevard: from Sepulveda to Century City.
6. Century Boulevard: from Interstate 405 to LAX.
7. La Tijera/Sepulveda Boulevards: from Interstate 405 to LAX.
8. Colorado Boulevard: through Eagle Rock (Tri-Cities Corridor).
9. In corridors that access Metrorail stations where high volumes of buses occur (Alvarado Street, Ventura Boulevard etc).

The potential for additional lanes, both for the exclusive use of public transportation and for the mixed use of public transportation and carpools should be examined. Both transit-only and transit/carpool HOV lanes on other principal arterials should be studied. Similar facilities may have application in other areas of the region.

Transportation System Management

Recommended TSM improvements include freeway ramp metering and construction of Park-and-Ride lots (*see* Figures 5-4 and 5-5), changeable message signs, and closed-circuit televisions (CCTV). Ramp meters control the pace at which vehicles enter a highway. Timed entry allows vehicles to merge safely without impeding existing traffic. This diminishes the bottlenecks often associated with on-ramps because the controlled access rate matches the highway's ability to absorb the additional traffic. Although motorists incur a delay on the ramp, the mainline capacity is enhanced and travel time and speeds are improved. Metered on-ramps also include HOV bypass lanes so that carpools, buses and motorcycles can bypass the queue.

Park-and-Ride facilities are constructed along major transit corridors to serve as staging areas for single-occupant motorists to join carpools or board public transit for the trip to work. The lots also provide convenient meeting spots for shopping and recreational trips.

1990 EXISTING & PROPOSED RAMP METERS
1993 RME DRAFT

VENTURA CO. KERN CO. INYO CO. SAN BERNARDINO

VENTURA LOS ANGELES ORANGE RIVERSIDE SAN DIEGO CO.

LEGEND

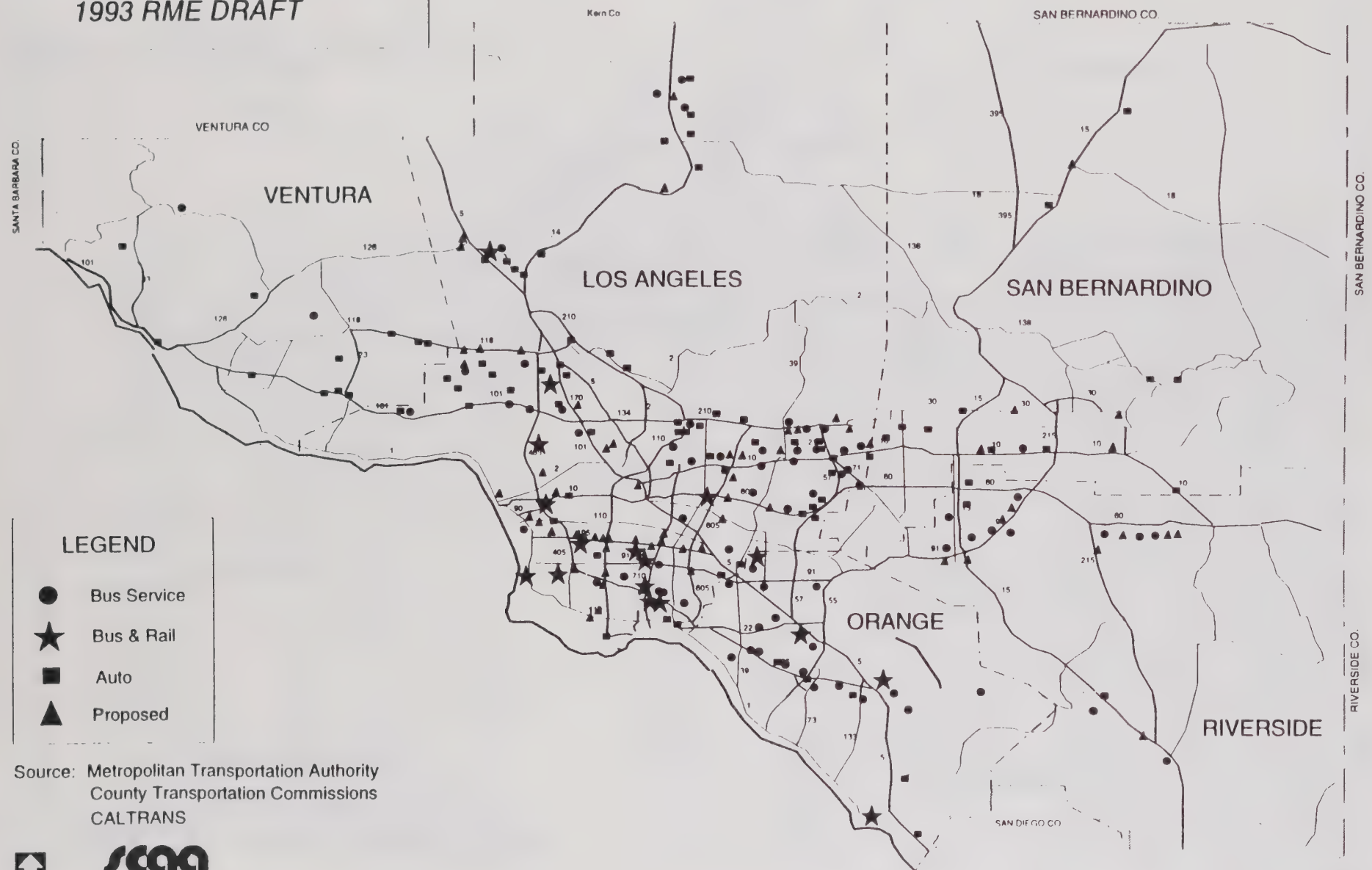
— Existing Ramp Meters
 ... Proposed or Programmed Ramp Meters

Source: County Transportation Commissions
 CALTRANS



SOUTHERN FINE ART COUNCIL
ASSOCIATION OF GOVERNMENTS

1990 PARK & RIDE LOTS 1993 RME DRAFT



Source: Metropolitan Transportation Authority
County Transportation Commissions
CALTRANS

Changeable message signs aid navigation around freeways events that cause congestion and delay while CCTV allows for surveillance of the network to detect delay, incidents, accidents and facilitate actions to reduce the duration of delay.

Safety and Accident/Incident Management

Caltrans, the county transportation commissions and the California Highway Patrol (CHP) currently employ various incident management programs. Mechanisms that allow for recovering the costs of incident/accident clean-up through incentive fees should also be examined. Efforts should be made to quantify and evaluate the impacts of accidents and incidents on the region's roadways. Mechanisms that address the accident/incident cost recovery should be investigated for possible implementation.

ANTICIPATED MOBILITY BENEFITS OF THE CONSTRAINED PROJECT ALTERNATIVE

Under the Constrained Project, travel on the regional system will be significantly worse in terms of average daily speed and hours of delay. The system will operate at an average daily speed of 27.5 miles per hour (mph) compared to a speed of 31.8 mph in 1990. Hours of delay will increase by 145.32 percent between 1990 and 2010. P.M. peak travelers will encounter a somewhat higher level of delay compared to the morning peak.

Overall, person trips and vehicle trips will climb 34.8 percent and 29.10 percent, respectively. Daily VMT will increase by 45 percent. Despite these relatively large increases, however, home-to-work vehicle trip-making is expected to increase less than 12 percent (11.94 percent); the average vehicle ridership (AVR) will improve as well, increasing by 11.20 percent. Transit ridership is expected to gain some of the former private vehicle commuters. The transit mode split for the home-to-work trip is expected to more than double from 5.58 percent to 11.8 percent. Shared ride trips will increase by 2.12 percent while the drive alone share will actually decline by 19.05 percent.

REGIONAL MOBILITY ELEMENT PLANNING TOOLS

SCAG Region Congestion Management System(CMS)

In its March 2, 1993 Notice of Proposed Rulemaking, the Federal Department of Transportation released draft regulations for congestion management system (CMS) development and implementation. Pursuant to the proposed rules, as the designated Metropolitan Planning Organization (MPO) for a transportation metropolitan area over 200,000 in population, SCAG has lead responsibility to develop a Congestion

Management System for the region. The CMS must be operational by October 1, 1994. The proposed rule also provides that the CMPs can satisfy the Congestion Management System for the region if they are determined by the Secretary to meet the requirements of the CMS.

CMS Requirements

The CMS will consist of a systematic process that provides information on transportation system performance for selecting and implementing cost-effective strategies to manage new and existing facilities so that traffic congestion is alleviated and the mobility of persons and goods is enhanced. The CMS is to enhance transportation investment decisions and improve the overall efficiency of the metropolitan area's transportation systems and facilities.

The CMS is required to do the following:

- Identify the geographic area (regional) of coverage and the transportation facilities available in the area where congestion is occurring, or where the potential for congestion exists within a Transportation Management Area, based on acceptable level of transportation system performance.
- Identify the causes of the congestion, evaluate the strategies for managing congestion and enhancing mobility.
- Develop a plan for the implementation of the most effective strategies.
- Ensure that the performance measures provide for the identification and monitoring of the extent of both recurring and non-recurring congestion, and the evaluation of the effectiveness of congestion reduction and mobility enhancement strategies.
- Provide a continuous program of data collection and system monitoring to determine the magnitude and duration of congestion.
- The CMS also requires that implementation responsibilities, time frame for the implementation, and probable funding sources be identified.

It should be noted that these CMS requirements are in accord with proposed rules promulgated by the Federal Department of Transportation (DOT). Final rules have not been released.

Options for CMS Development and Implementation

As part of its CMS responsibilities, SCAG has identified at least three

options for possible development and implementation as follows:

Option 1: The Existing State CMPs as The Regional CMS. SCAG's evaluation of the existing CMPs indicates that they do not meet the statutory requirements of the CMS. Adopted CMPs do not contain all necessary elements of the CMS and do not meet the scope of the requirements.

Option 2: Amended State CMPs as the Regional CMS. This alternative would involve amending the CMPs with the CMS as the specific reference to make them compatible with the requirements of the CMS. The evaluation concluded that CMS development and implementation was best achieved under the auspices of a centralized mechanism rather than through the efforts of five different approaches that would ultimately require coordination, cooperation, and a comprehensive program scope. This alternative would insure that the CMPs were based on the policies of the Regional Transportation Plans.

The Statewide Air Quality—CMP Coordination Study has implications for the development of the regional CMS. The Study is expected to be completed in Spring 1994. Although the Study scope was designed to meet several objectives, CMS and CMP coordination is being considered. Hence, the study may recommend amendments to the CMP legislation that could possibly become effective in 1995.

Option 2A: Amended State CMPs as the Regional CMS. Option 2A is a variation on Option 2: The existing CMPs would serve as the CMS in those functions where they can meet the CMS requirements and the SCAG RME would serve as the CMS in areas where the CMPs are lacking. This alternative would not be sensitive to the Statewide Air Quality—CMP Coordination Study. This approach was rejected because of the fractured nature of the development and implementation process.

Option 3: SCAG region CMS as a element of the RME. The SCAG transportation plan would serve as the primary basis for development and implementation of the CMS. The RME contains all required elements of the CMS and the RME comprehensive, coordinated and cooperative development process currently exists and is well established. Moreover, the RME has statutory linkage to the state CMPs through the required consistency and compatibility of the CMPs with the RME and their incorporation into the RME. SCAG also has the statutory authority to resolve intercounty disputes between the CMPs. This alternative though similar to Option 2 does not go far enough in achieving the required linkages.

The Preferred CMS Alternative

SCAG is cooperating with Caltrans, Congestion Management Agencies, and others to amend the California Congestion Management statutes to

provide for improved linkages between the CMPs and the region's comprehensive transportation planning process.

Other issues associated with RME/CMS development and implementation will continue to be addressed in Fiscal Year 1994 to meet statutory deadlines. A formalized process for affected agency input is under development. SCAG will make a final determination on the CMS by October 1994.

The System of Regional Significance

The regional transportation plan must describe the transportation system (including, but not necessarily limited to major roadways, transit, and multi-modal and intermodal facilities) that should function as an integrated Metropolitan Transportation System (MTS), giving emphasis to those facilities that serve important national and regional transportation functions³. The definition of the MTS will be examined and an improved definition developed, based on issues raised by county transportation commissions, Caltrans, and others, subsequent to adoption of the 1993 RME.

The existing SCAG System of Regional Significance (SRS) was approved in the 1989 Regional Mobility Plan and consists of approximately 3,380 miles of federal and state highways in addition to 3,450 miles of major arterials. Arterials are defined as roads that transport 10,000 or more average daily traffic (ADT) and carry significant volumes of traffic on routes seven miles or more in length⁴. (See Figure 5-6 System of Regional Significance.)

In connection with ongoing efforts to better integrate the regions systems of highways, transit, airports, harbors etc. the SRS will be further refined according to the following criteria:

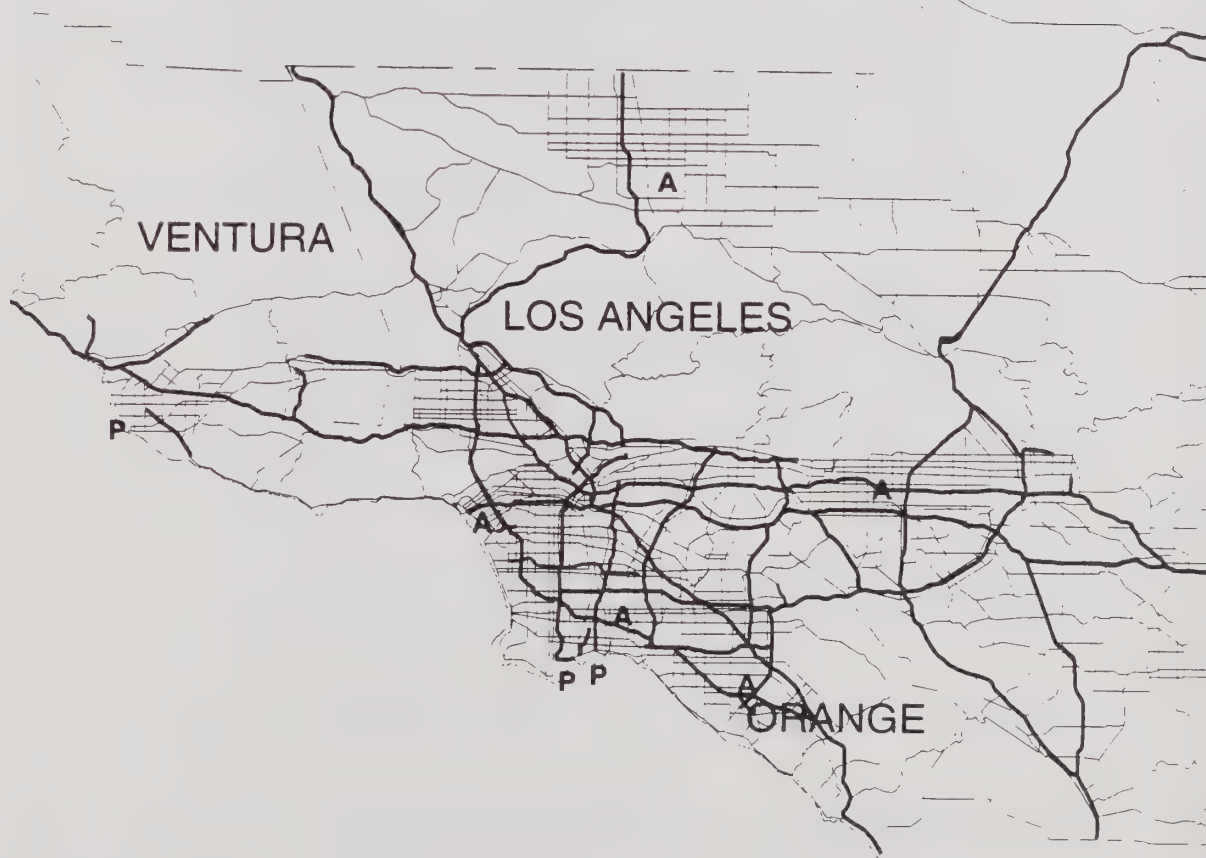
- Arterials parallel to a freeway that can be used as alternate routes.
- Routes that provide access to major activity centers such as amusement parks, regional shopping centers, and military bases.
- Routes that are included in each county's CMP.
- Goods movement routes including both truck routes and rail lines (including rural agricultural routes that provide goods to the region).

³ 23 U.S.C. 134(g)(2)(A)



⁴ The definition for regionally significant was adopted as part of the Regional Transportation Improvement Program Guidelines. Some county transportation commissions have suggested that the arterial definition should vary by county, and that issues will be considered and resolved during the public review of the RME.

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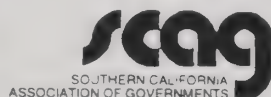
1989 SYSTEM OF REGIONAL SIGNIFICANCE 1993 RME DRAFT



LEGEND

	Freeway
	Arterial
A	Air Carrier Airport
P	Port

Source: County Transportation Commissions



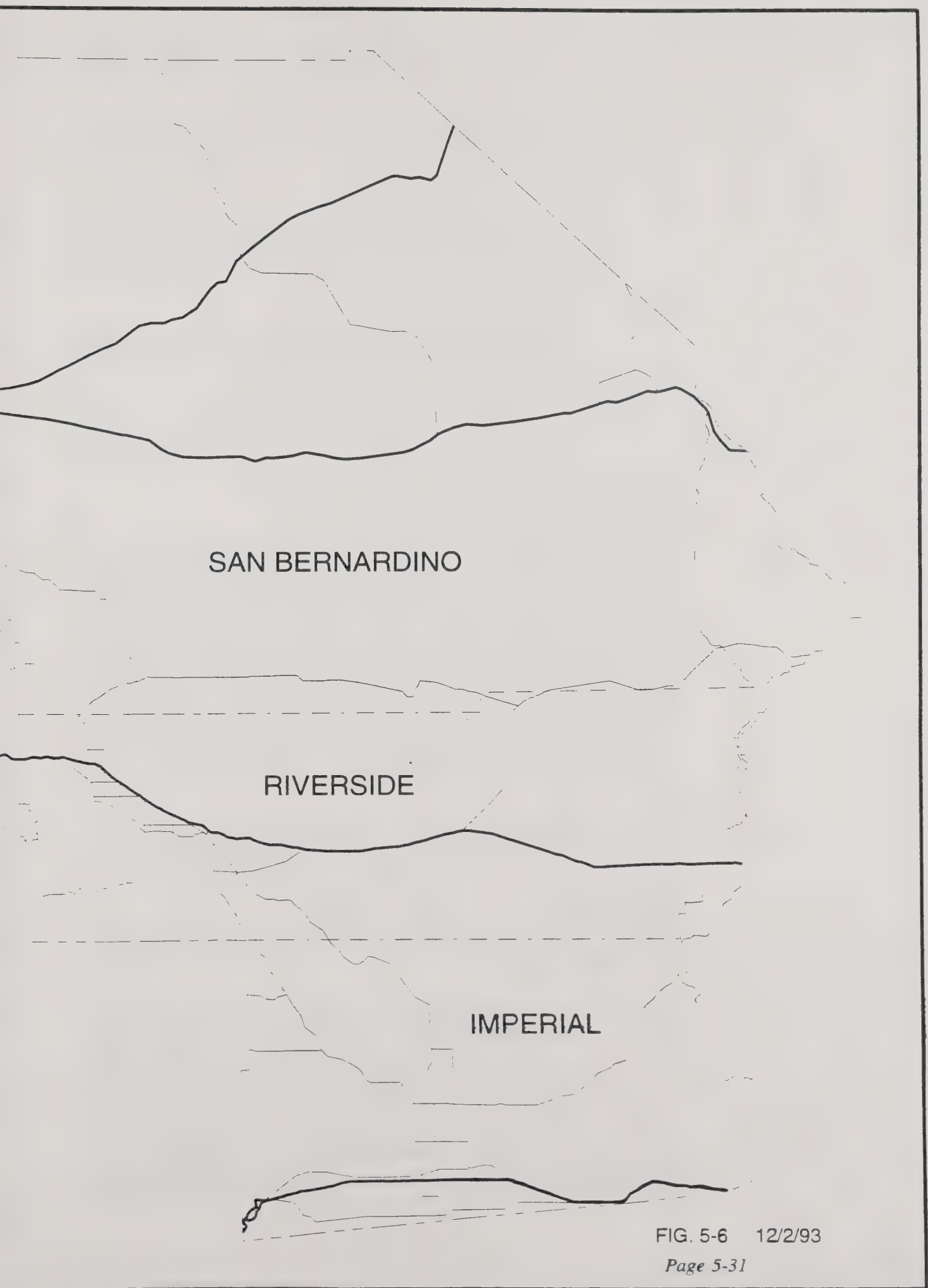


FIG. 5-6 12/2/93

- Fixed transit routes such as light rail and commuter rail, and express bus routes.
- Intermodal transfer facilities.
- TDM facilities such as telecommunication centers, park-and-ride lots, bicycle transportation facilities, pedestrian walkways, and others; and
- TSM facilities such as ramp metering, Smart Corridors, Changeable Message Signs (CMS), Closed Circuit TV (CCTV), and others.
- Review 10,000 as the threshold figure for Average Daily Traffic (ADT) in defining arterials.

National Highway System

The National Highway System (NHS) is one component of the MTS. The NHS will consist of the interstates, a number of strategic highways needed for national defense purposes, strategic highway connectors, and selected principal arterials. Recommendations for the NHS were cooperatively developed by the state of California and the Metropolitan Planning Organizations (MPOs) and are shown in Figure 5-7. Congress is expected to approve the NHS by September, 1995. Until that time, the NHS consists of the interstates and streets and roads currently classified as principal arterials. While the NHS in the SCAG region comprises only 15 percent of the mileage of the MTS, slightly more than 50 percent of the region's VMT takes place on the system.

Efforts continue to refine the system based upon expanded criteria that are intended to integrate and focus planning efforts on the roadway system as a comprehensive whole and as a part of the overall MTS.

RELATIONSHIP OF THE REGIONAL STREETS AND HIGHWAYS PROGRAM TO THE CONGESTION MANAGEMENT PROGRAMS

The Congestion Management Programs (CMPs) for Ventura, Orange, Riverside, Los Angeles, and San Bernardino counties are incorporated into the RME. California Government Code §65089(b)(5) requires that a seven-year Capital Improvement Program (CIP) be developed as a part of the CMP. The CIP is designed to maintain or improve traffic level of service and transit performance standards, to mitigate land use impacts, and to conform to vehicle emissions mitigation strategies. Dependent upon the county, the roadway component of the CIP pertains to freeways and highways or arterials, or all three.

1990 NATIONAL HIGHWAY SYSTEM 1993 RME DRAFT

SANTA BARBARA CO

VENTURA

KERN CO

LOS ANGELES

ORANGE

INYO CO

SAN BERNARDINO

NEVADA

RIVERSIDE

SAN DIEGO CO

IMPERIAL

MEXICO

LEGEND

- Freeway
- State Highway

Source: CALTRANS



scag
SOUTHERN CALIFORNIA
ASSOCIATION OF GOVERNMENTS

FIG. 5-7 10/15/93

Page 5-33

An important aspect of the CMPs is the desired integration of the capital improvement strategies with both transit and transportation demand management actions and deficiency plans tied to mitigate specific land-use developments. While the CMP is best viewed as a whole rather than in its constituent parts, the Regional Streets and Highways analysis deals only with the roadway portion of the programs. Transportation Demand Management (TDM), transit, and land use are dealt with in Chapter 3, Regional TDM and Chapter 4, Regional Transit and Inter-city Rail Program.

ADVANCED TECHNOLOGY IN TRANSPORTATION

Advanced technology can be used to enhance the LOS provided by the existing roadway network without having to increase capacity. These advanced technologies include Smart Streets/Corridors, Intelligent Vehicle Highway System (IVHS), applying electronics, communications or information processing to improve the efficiency and safety of the surface transportation system. Table 5-8 indicates the several IVHS technologies available.

TABLE 5-8
INTELLIGENT VEHICLE HIGHWAY
SYSTEM (IVHS) PROGRAMS

IVHS SYSTEM	PROGRAM DESCRIPTION
Advanced Traffic Management Systems (ATMS)	ATMS will integrate management of various roadway functions including freeway ramp metering and arterial signal control. ATMS will collect, utilize, and disseminate real-time data on congestion on arterial streets and expressways and will alert transit operators of alternative routes.
Advanced Traveler Information Systems (ATIS)	ATIS provides a variety of information that assists travelers in reaching a desired destination via private vehicle, public transportation, or a combination of the two.
Advanced Vehicle Control Systems (AVCS)	AVCS enhances the driver's control of the vehicle to make travel safer and more efficient.
Commercial Vehicle Operations (CVO)	Operators of fleets of trucks, buses, vans, taxis, and emergency vehicles adopting IVHS technologies.
Advanced Public Transportation Systems (APTS)	APTS will use constituent technologies of ATMS, ATIS, and AVCS to improve operation of high-occupancy vehicles, including transit buses, cars, and vanpools. ATIS will inform the traveler of the alternative schedules and costs available for a trip.

Source: IVHS America, May 1992

SMART CORRIDORS

A Smart Corridor is one in which an agency's control and response decisions are made in agreement with the actions of other agencies involved in handling traffic congestion. The agencies involved include Caltrans, CHP, local emergency services providers, and local transportation departments. In addition, Smart Corridors will require direct involvement of the county transportation commissions.

A Smart Corridor is also one in which all facilities, including freeways and surface streets, are used at their maximum efficiency during both normal periods of congestion and when an incident has occurred. This would involve freeway surveillance and control, ramp metering, improved traffic signal control, incident detection and response, motorist service patrols, and other traffic management features.

Smart Corridors provide the driver with the information needed to make intelligent decisions on the best route to travel, given existing conditions. In some cases, the motorist may delay trips, cancel trips, or use alternatives to their normal route. Motorist information opportunities include commercial radio and television, changeable message signs, highway advisory radio, telephone call-in, computer bulletin boards. They also include more sophisticated elements such as in-vehicle navigation systems, special television messages, and dedicated in-vehicle radio signalling.

Smart Corridors Under Development

The Santa Monica Freeway Smart Corridor covers an approximately 14.5 mile stretch of the Santa Monica Freeway. Project implementation began in mid-1993 and will be completed by the Spring of 1994. Project began in early 1993 with the purpose of assessing the effectiveness of project elements and the applicability of Smart concepts to other corridors. The total project cost is approximately \$48 million, which has been provided through federal, state and local sources.

The Glendale/Pasadena/Burbank Smart Corridor Project is currently under development. The Smart Corridor Project, (210, 134, I-5 Freeways), including the cities of Pasadena, Los Angeles, Glendale, and Burbank is funded by the ISTEA/Proposition C fund.

Potential SMART Corridors

In accordance with Assembly Bill 1239, the Smart Corridor Statewide Study identified combined freeway and surface corridors where significant congestion exists and where the Smart Corridor concepts will prove cost effective in reducing congestion. In the SCAG region this includes the urbanized portions of Los Angeles, Ventura, San Bernardino, Riverside, and Orange counties. Also, all freeways in

Caltrans Districts 7, 8, 11, 12 were reviewed to evaluate the level of congestion and opportunities for implementing Smart Corridor techniques.

Examples of potential Smart Corridors in the region are identified in Tables 5-9 and 5-10.

**TABLE 5-9
LOS ANGELES COUNTY
POTENTIAL SMART STREET CORRIDORS**

ROUTE	DESCRIPTION
Downtown L.A. Ring	I-5, I-10, 101, & I-110
5	Between I-605 & Rte. 60
5	Between Rte 110 & Rte. 134
10	Between I-5 and I-605
60	Between I-5 & I-605
60	Between I-605 and Rte. 71
91	Between I-10 & Beach Blvd.
101	Between I-110 & Rte. 134
101	Between Valley Circle Blvd & I-5
110	Between I-405 & I-10
210	Between Rte. 134 & Rte. 30
405	Between I-605 & I-110
405	Between I-110 & I-10
405	Between I-10 & 101
405	Between 101 & I-5
605	Between I-405 & I-5
605	Between I-5 & I-10

Source: Statewide Smart Corridor Study

**TABLE 5-10
ORANGE COUNTY
POTENTIAL SMART STREET CORRIDORS**

ROUTE	DESCRIPTION
22	I-405 to Rte. 55
55	I-405 to Rte. 91
57	I-5 to Rte. 90
91	Rte. 91 Imperial Hwy to Beach Blvd.
405	Rte. 22 to I-5

Source: Statewide Smart Corridor Study

ISSUES IN NEED OF FURTHER STUDY

Several issues remain to be considered relative to regional goal attainment including the following:

- The role that local streets and roads can/will play in achieving mobility.
- How the region will address immediate congestion problems while attempting to reduce the region's reliance on SOV.
- Roadway planning for clean fueled single occupancy vehicles.
- Effectively reducing the impact of freight transportation in the region.
- Improving the efficiency of freight transportation on the region's roadways.
- Coping with energy demands for transportation purposes if the reliance on the SOV continues.

CHAPTER SIX: REGIONAL NON-MOTORIZED TRANSPORTATION PROGRAM

INTRODUCTION/BACKGROUND

Non-motorized transportation is generally defined as walking and bicycling. In addition, however, other non-motorized modes, such as equestrian travel and skating, should not be overlooked. While non-motorized transportation is considered an element of the vehicle substitution strategy of Transportation Demand Management (TDM), bicycling and walking are distinct modes that not only share facilities with other modes, but also require unique facilities.

To enhance bicycle and pedestrian travel, the state of California requires consideration of pedestrian programs and links to transit, where appropriate, and the Regional Mobility Element (RME) is required to develop an action program that includes a program for developing intracity and intercity bicycle programs.

ASSESSMENT OF EXISTING NON-MOTORIZED TRANSPORTATION

Bikeways provided throughout the region are classified as Class I, separated pathways; Class II, bicycle lanes; and Class III, signed routes. Figure 6-1 shows that throughout the region, the Class I bicycle system is not very extensive. Class II facilities throughout the region are much more extensive, in terms of providing access on the arterial and highway (where bikes are permitted) network, but large gaps in the system remain. Class III bikeways provide alternative routes to some high-volume, high-speed arterial, and thus fill in many gaps left by Class I and Class II, yet gaps remain. Furthermore, not all Class III routes continue to provide safe and convenient alternatives.

In addition to paved facilities, most of the counties have developed a trails program for hiking, mountain biking, and equestrian travel. Although these facilities are primarily recreational they can provide travel to scenic and recreational areas. Convenient non-motorized access to these sites can reduce the need for motorized trips to the destinations served by these facilities.

With the existing infrastructure, the region is currently experiencing a home-to-work trip mode-split of almost 1 percent for bicycling, and 2 percent for walking. The daily mode-split for all bicycling trip purposes is about 1 percent, and about 8 percent for walking ¹

¹ 1990 Nationwide Personal Transportation Survey (NPTS) - Data covers the SCAG region

1993 CLASS I BICYCLE ROUTES 1993 RME DRAFT



Source: County Transportation Commissions

Note: SANBAG, CVAG & IVAG Information
Unavailable at time of printing



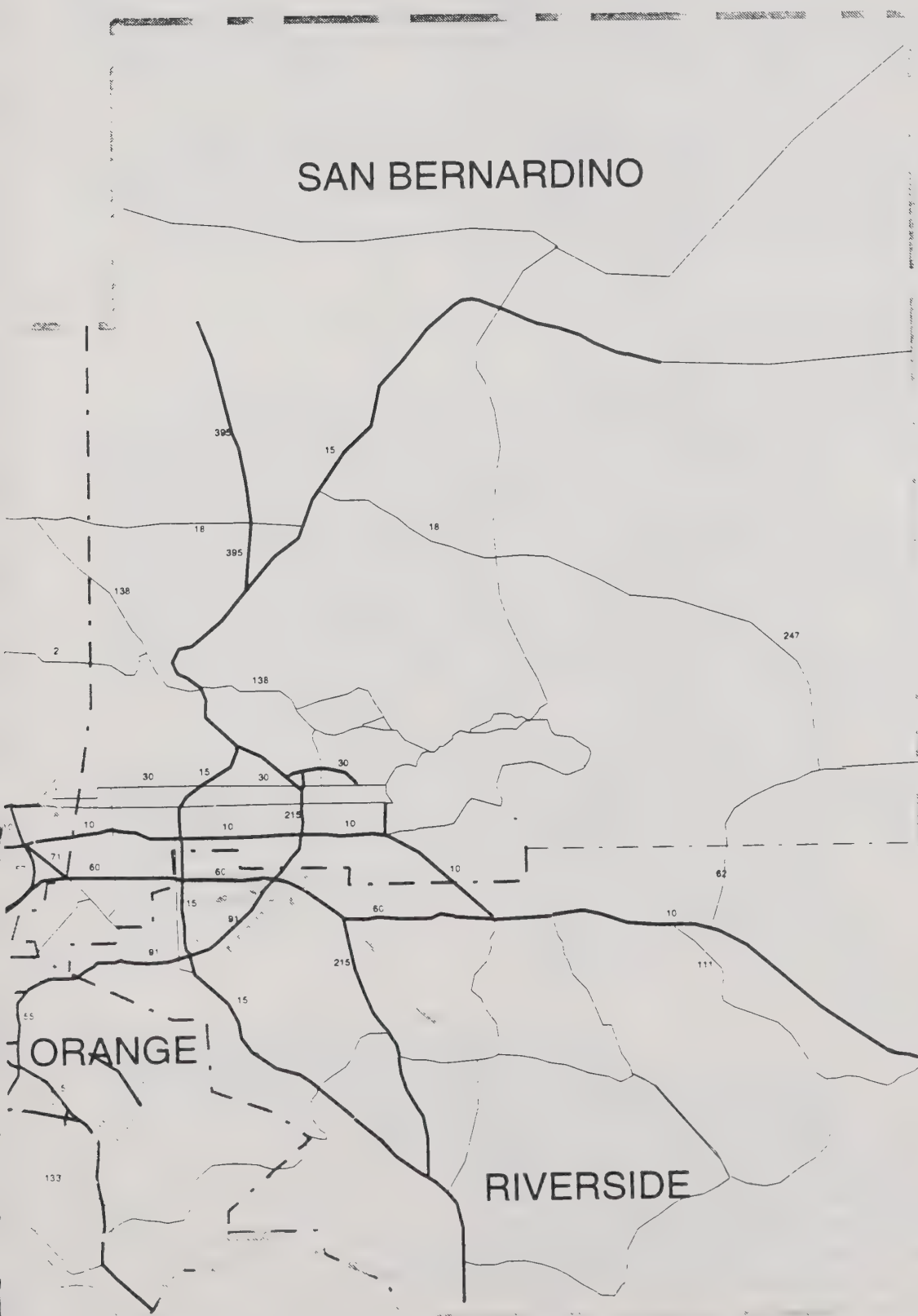


FIG. 6-1 10/14/93

A number of barriers that impede pedestrians and bicyclists, and prevent potential pedestrians and bicyclists have been identified. These barriers include the following:

- Negative perceptions about non-motorized commuting.
- Unsafe, insufficient, and inconvenient infrastructure.
- Crime, including both personal safety and security of property.
- Lack of access to transit.
- Land-use patterns and site designs that are unfriendly to pedestrians and bicyclists.

GOALS AND OBJECTIVES

The non-motorized program has two goals to improve the existing non-motorized system and help the region meet its mobility, air quality, and energy goals. First, is to make the overall transportation system accessible, safe, and convenient for bicycle and pedestrian travel (i.e., "user-friendly" to bicyclists and pedestrians). Accessibility for bicyclists is defined by the availability of bikeways (routes, lanes, paths); bicycle facilities (bicycle racks, lockers); and connections to transit (carpool/vanpool as well as bus/rail). Accessibility for pedestrians is defined as the availability of sidewalks and pathways, and site designs providing safe and convenient pedestrian access to and throughout residential, commercial, and employment sites and centers.

The second goal is to increase the pedestrian and bicycle mode-split, thus reducing vehicle trips and vehicle miles. The system will not only have to better accommodate existing users, it will also have to encourage new potential users. The objective is to increase the level of daily bicycle and pedestrian trips to 10 percent of all daily trips, and increase the level of home-to-work bicycle and pedestrian trips to 5 percent (based on NPTS survey data).

RECOMMENDED POLICIES

A set of strategies is being recommended for overcoming the barriers identified, and meeting the program's objectives. These strategies can be categorized under the following four headings:

- Infrastructure improvements
- Education/Promotion
- Enforcement
- Urban form/land-use and site designs

Efforts in each of these areas are being recommended to meet RME goals and non-motorized element objectives.

The following policies are recommended to implement the four strategies identified above, and are intended to comprehensively incorporate the planning, development, and operation of the non-motorized system into the existing transportation development and operations structure.

- The development of the regional transportation system should include a non-motorized transportation system that provides an effective alternative to auto travel for appropriate trips. The planning and development of transportation projects and systems should include the following, as appropriate:
 - Provision of safe, convenient, and continuous bicycle and pedestrian infrastructure to and throughout areas with existing and potential demand such as activity areas, schools, recreational areas (including those areas served by trails), which will ultimately provide the same or better (when practical) accessibility provided to the motorized vehicle.
 - Accessibility to transit (bus terminals, rail stations, Park-And-Ride lots) where there is demand and transit boarding time will not be significantly delayed.
 - Maintenance of safe, convenient, and continuous non-motorized travel during and after the construction of transportation and general development projects.
- Entities and programs that currently support the auto should be encouraged to provide the same types of services for non-motorized transportation, including education, promotion, and enforcement.
- Urban form/land-use and site-design policies should include requirements for non-motorized transportation just as requirements to accommodate other modes are included.

RECOMMENDED ACTION PROGRAM

Chapter 12 identifies the recommended actions to implement the policy program. The actions, which fall under the four major strategies, are intended to be implemented according to the needs identified by the subregions. However, to provide an effective non-motorized system, increase non-motorized trips, and thus reduce dependence on the single-occupant vehicle, it is expected that each strategy is necessary and will need to be implemented in each subregion.

Subregional Input

Subregions have provided input on the selection of appropriate non-motorized actions for the particular subregion. Addressing implementation of the strategies at the subregional level will allow greater flexibility in reaching regional trip reduction goals and meeting local non-motorized needs. Table 6-1 identifies the non-motorized-related actions and needs of the various subregions. These have been incorporated in this chapter.

TABLE 6-1
SUBREGIONALLY RECOMMENDED IMPLEMENTATION PROGRAM

ACTIONS	SUBREGIONS
<u>Land Use Related</u> <ul style="list-style-type: none"> • Coordinate and phase transportation network improvements with Land Use decisions • Incorporate urban form into development review policies • Physical design to support alternate modes • Bike lanes, bike access to major activity centers, recreation/education centers • Expansion of regional bike network • Non-motorized access to work based transit/employment • Subregional network with local feeder network 	Arroyo Verdugo, South Bay Cities Association, Western Riverside Council of Governments (WRCOG), City of Los Angeles, Orange County Bicycle Coalition, San Gabriel Valley Association of Cities, Westside Cities
<u>Non-motorized use facilities</u> <ul style="list-style-type: none"> • Facilitate safety and usage • Integrate with work based transit • Complete TDA expenditure on funding 	Southeast Los Angeles (SELAC), WRCOG, Westside Cities, South Bay Cities Association, Orange County Bicycle Coalition, Arroyo Verdugo
<u>Rideshare incentives/advocacy</u> <ul style="list-style-type: none"> • Education programs • Improve ridesharing, non-motorized modes to work 	Orange County, WRCOG, Orange County Bicycle Coalition, South Bay Cities Association, Arroyo Verdugo
<u>Other</u> <ul style="list-style-type: none"> • Prohibit removal of bike ways 	Orange County Bicycle Coalition

CHAPTER SEVEN: REGIONAL GOODS MOVEMENT PROGRAM

INTRODUCTION

Goods movement in the SCAG region is a transportation activity with critical linkages to such areas as the economy, mobility, the environment, quality of life, and land use. Formally defined, goods¹ movement refers to the facilities, activities and people involved in transporting commodities, data, raw materials and products for the purpose of consumption, manufacture, or disposal. Public sector and private enterprises participate in goods movement activities as diverse as the movement of oil and water via pipeline; the transport of mail and packages via truck and plane by the United States Postal Service; the import and export of motor vehicles via seaports; the transfer of information via fiber-optic cable; and the shipment of agricultural produce from the Imperial Valley subregion to other SCAG subregions and the nation.

Focus of the Program

The Goods Movement Program was developed in cooperation with representatives of the subregional governments whose members sit, along with the private sector, on various advisory and policy-making boards and committees. At various stages of the development process, other Regional Mobility Element (RME) programs provided comments on goods transportation issues.

IMPLEMENTATION STATUS OF THE 1989 REGIONAL MOBILITY PLAN

Much activity in implementing 1989 Plan recommendations has occurred in the system development, regulatory and management arenas. The Plan recommended that the San Pedro Bay port authorities and local governments form a Joint Powers Authority to develop the Consolidated Railroad Corridor. The JPA was created in 1989. Although the Preferred Alternative for the project was certified in January 1993, full funding has not been identified for the project.

The City of Los Angeles pursued the development of a truck management plan that would have restricted truck travel on city arterials during peak periods. It appears that the City has decided not to pursue the final implementation of a peak period management program.

¹ Although freight, goods and cargo are used synonymously, freight also refers to the charge for transporting goods.

Caltrans, the county transportation commissions and the California Highway Patrol (CHP) currently employ various incident management programs. These programs evolved from the Los Angeles Area Freeway Surveillance and Control Project—a demonstration project undertaken on a 42 mile loop formed by the Santa Monica (I-10) Freeway, Harbor (I-110) Freeway, and the San Diego (I-405) Freeway. Another program called Clearing Lanes Efficiently and Rapidly (CLEAR) involves the assignment of specially trained teams of CHP officers and supervisors to selected urban freeway corridors in Los Angeles during peak periods to provide rapid response, verification and removal of incidents.

THE 1993 RME FRAMEWORK FOR GOODS MOVEMENT PLANNING

In recognition of problems and issues that are beyond the scope of the current program, SCAG will complete the Intermodal Goods Movement Study and the Railroad Consolidation Study. The Intermodal Study will provide information on intermodal operations in the SCAG region and their relationship to the economy, congestion, and air quality. The Consolidation Study will investigate the feasibility of consolidating rail freight activities on an east-west corridor in the SCAG region, for the purpose of reducing rail related emissions. These studies will be completed in fiscal years 1995 and 1994, respectively.

PROFILE OF THE GOODS MOVEMENT SYSTEM IN SOUTHERN CALIFORNIA 1990

A major portion of the goods movement system in Southern California consists of fixed-location, publicly-owned infrastructure that accommodates privately-owned and operated freight carriers. Components of the system (Figures 7-1 and 7-2) include all major modes of transport: airports, seaports, highways, freeways, and arterials (public), and railroads (private). The system also includes intermodal transfer facilities, freight yards and truck terminals. Figures 7-3, 7-4 and 7-5 depict truck and rail access to the seaports in the region.

Intermodal System

Various combinations of intermodal operations occur in the region: truck-train; truck-plane; truck-ship, and truck-truck. The amount and quality of information on the intermodal system relative to commodities, weight, values, volumes, operations, and economic markets vary tremendously. The region has always had some degree of intermodal operations. Innovations in the shipping industry (e.g., containerized cargo), however, have greatly increased intermodal operations. The

Intermodal Goods Movement Study, which will be completed in February 1995, will provide information on intermodal operations in the SCAG region.

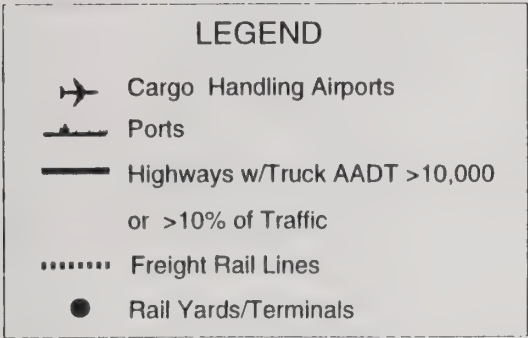
Goods Transportation and Ground Access

The regional transportation system of interstates, state highways and designated truck routes provide ground access to local, subregional and/or inter-regional markets. The ground transportation system also supports access to the major air carrier airports, seaports, intermodal facilities and military airfields.

National Highway System (NHS). Under the ISTEA, the NHS when approved by Congress in September 1995, will consist of the interstates and other strategic highways, which provide motor vehicle access between these facilities and major port, airport, public transportation facility, or other intermodal transportation facility (*see* Figure 5-6 in Chapter 5).

The NHS largely replaces the federal-aid funding classification system. The federal government will maintain an interest in NHS facilities for the purpose of funding, operations, and maintenance.

1990 GOODS MOVEMENT
IN THE WESTERN
SCAG REGION
1993 RME DRAFT

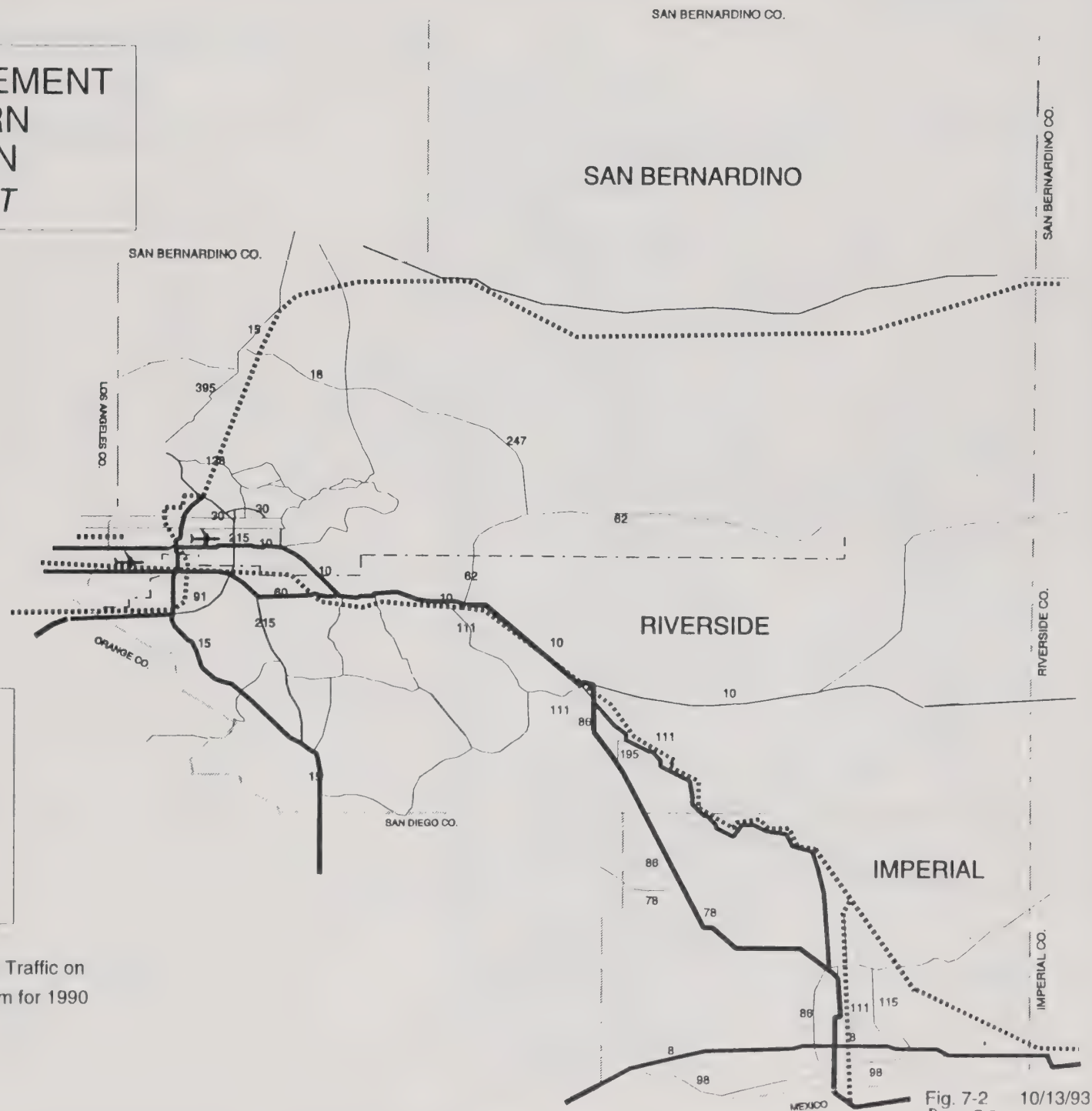


SOURCE: CALTRANS Annual Average Truck Traffic on the California State Highway System for 1990

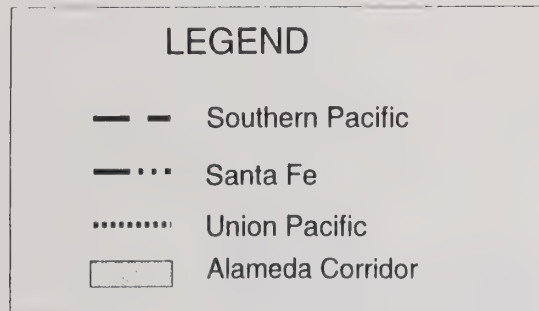
1990 GOODS MOVEMENT IN THE EASTERN SCAG REGION 1993 RME DRAFT



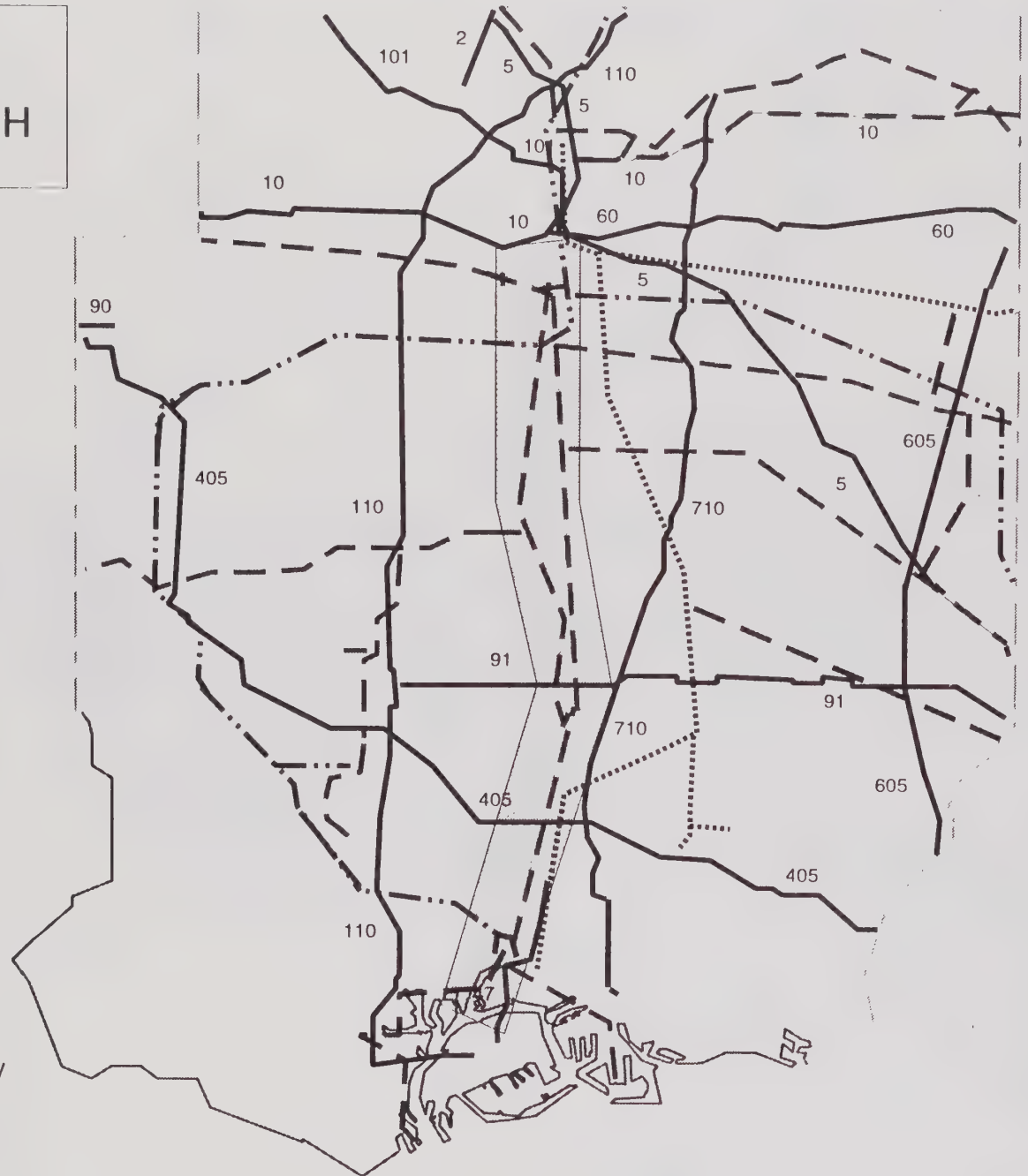
SOURCE: CALTRANS Annual Average Truck Traffic on the California State Highway System for 1990



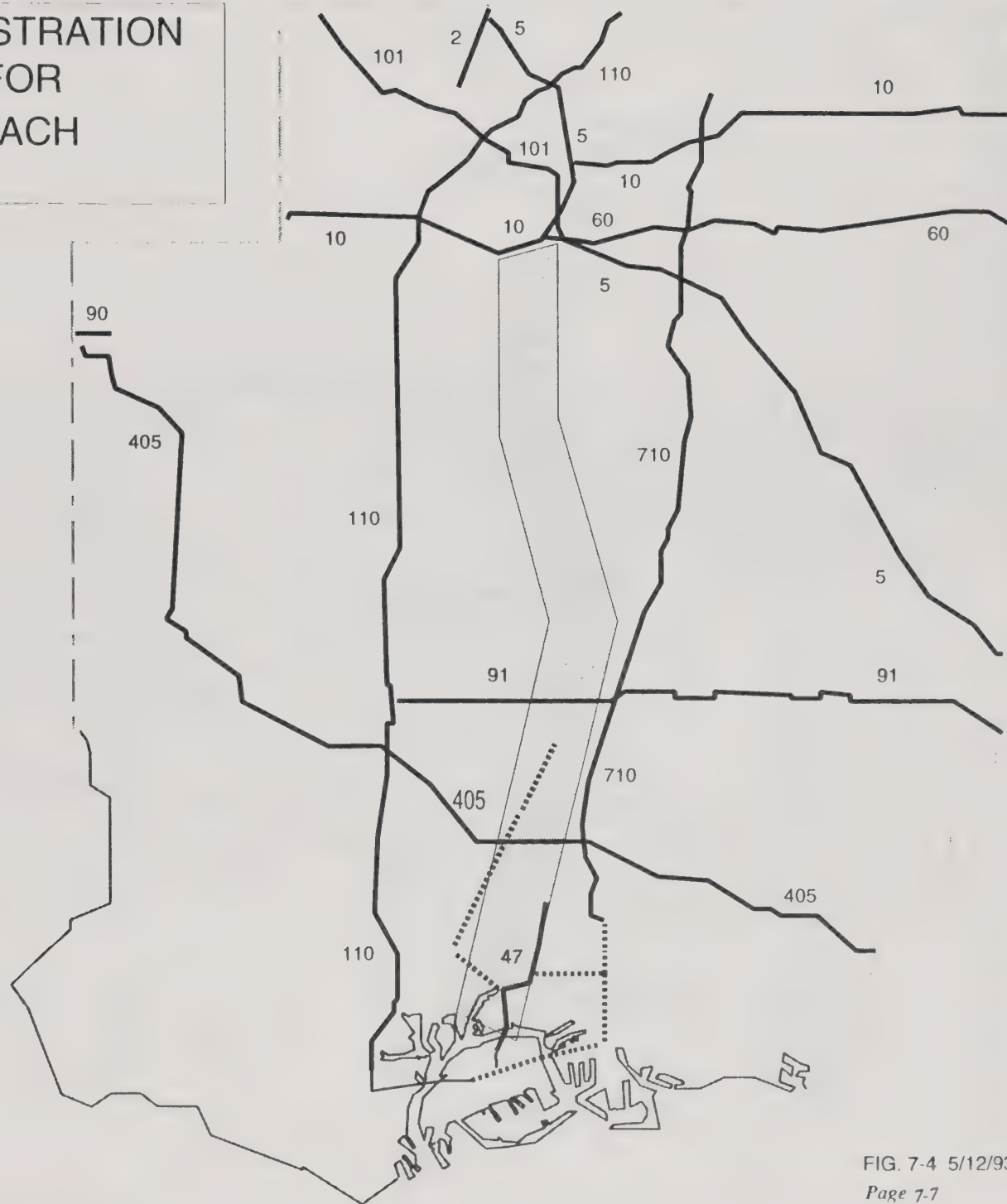
1990 EXISTING RAIL
PORT ACCESS FOR
LOS ANGELES/LONG BEACH
1993 RME DRAFT



Source: Southern California Regional Rail Authority



1990 EXISTING AND DEMONSTRATION TRUCK PORT ACCESS FOR LOS ANGELES/LONG BEACH 1993 RME DRAFT



LEGEND

..... Demonstration Project

□ Alameda Corridor

— Existing Freeway

Source: CALTRANS
Port of Los Angeles
Port of Long Beach

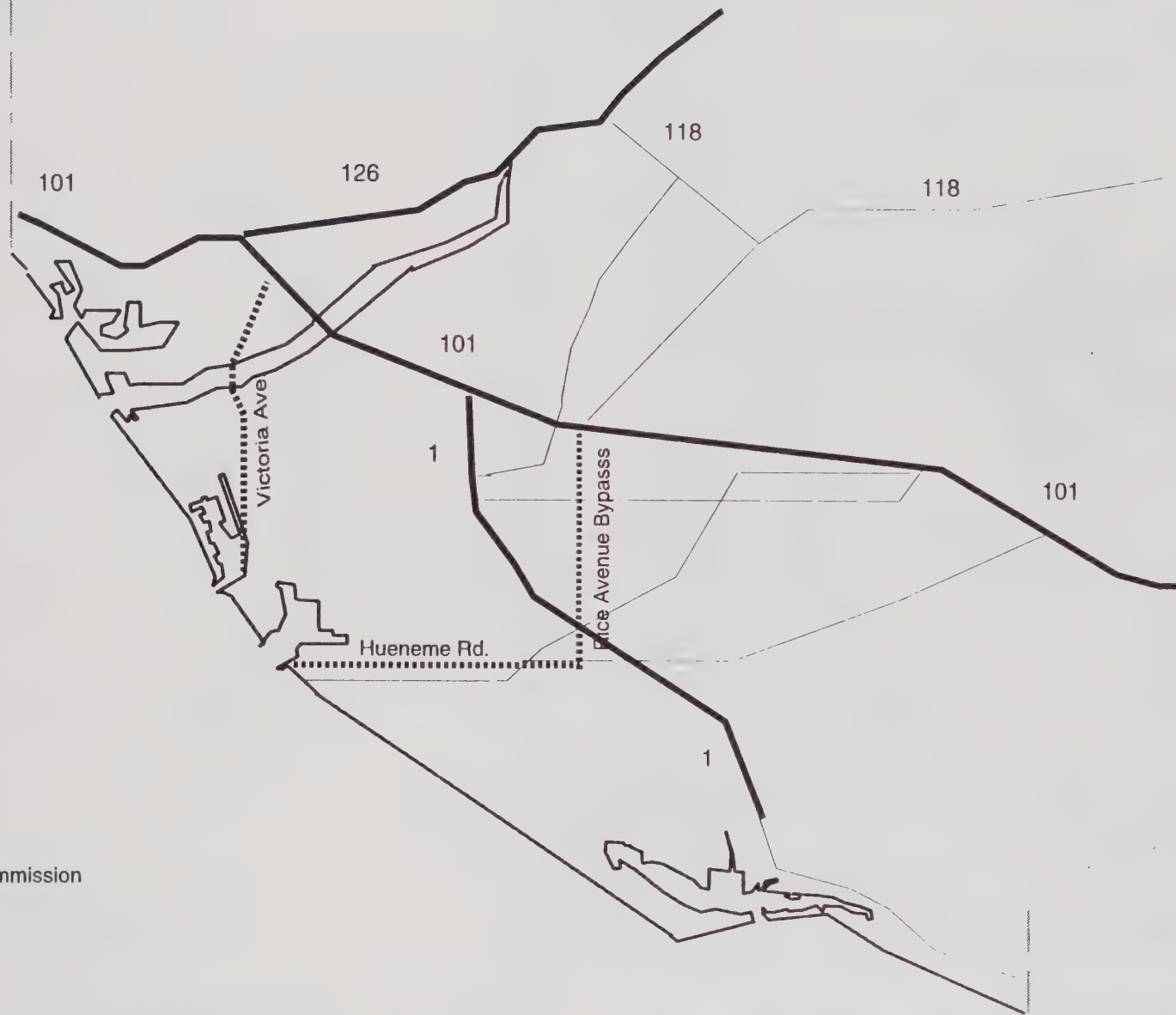


scag
SOUTHERN CALIFORNIA
ASSOCIATION OF GOVERNMENTS

FIG. 7-4 5/12/93

Page 7-7

1990 ACCESS FOR
PORT HUENEME
1993 RME DRAFT



LEGEND

- Existing Freeway
- Proposed Project

Source: Ventura County Transportation Commission

Institutional Influences On Goods Movement In Southern California

Table 7-1 provides a partial listing of the influence of various levels of governmental agencies on goods movement. Other governmental divisions such as the departments of Agriculture and of Fish and Game, though not shown, have requirements to which movers of these goods have to comply.

The five major air carrier airports (Los Angeles International, Glendale-Burbank-Pasadena, Ontario International, John Wayne/Orange County and Long Beach) and seaports (Los Angeles, Long Beach and Port Hueneme) operate as autonomous agencies within their respective local governments, and have jurisdiction over the various passenger and cargo carriers that operate therein. Policy-making authority is vested in airport and port commissions appointed by their respective municipal governments. The private users of the goods movement system function as independent operators and through representation in industry organizations such as the American Trucking Association, California Trucking Association, American Association of Railroads and the Steamship Association of California.

Goods Movement Markets

Several market service areas and mode relationships are discernable depending on the geographic market area. This analysis deals with goods movement markets within the SCAG region, and between the SCAG region and the rest of the world. Local and subregional markets are those within the SCAG region. Inter-regional goods movement occurs between the SCAG region and the regions of the continental United States. Goods movement between the SCAG region and other countries defines the international markets. Goods movement between the SCAG region and the U.S. regions that are not on the continent are also included under international markets.

TABLE 7-1
A SELECTED LISTING OF GOVERNMENT AGENCIES AND
THEIR INFLUENCE ON GOODS MOVEMENT
IN THE SCAG REGION

Level	Agency	Influence/Regulation	Mode Influenced
Federal	Department of Transportation	Transportation Policies and Funding	All modes
	Federal Aviation Administration	Safety and operational	Airlines
	Federal Railroad Administration	Safety and operational	Railroads
	Environmental Protection Agency	Emissions--air and water quality	All modes
	Federal Maritime Commission	Licensing, rates	Ocean common carriers
	US Customs	Inspections, duty and fee collection	All modes
	US Coast Guard	Licensing, Safety & Operational	Maritime operations
	Federal Highway Administration	Funding and Operational	Highways and Trucking
	Interstate Commerce Commission	Licensing and operational	Railroads and Trucking
State	Department of Transportation, Division of Aeronautics	Funding, operational, Safety, System Planning, Monitoring, Capital Improvements	Roads and trucking
	California Highway Patrol	Safety	Trucking
	Energy Commission		
	Air Resources Board	Air quality	All modes
	Department of Motor Vehicles	Vehicle registration, driver licensing	Trucking
	Public Utilities Commission	Safety and operational	Railroad, Trucking
Regional and Local	CALTRANS Districts 7, 8, 11, 12	Funding, operational	Roads and trucking
	Air Quality Management Districts (1) and Air Pollution Control Districts (3)	Air quality	All modes
	Local Governments	Operational, funding	All modes

Mode-Market Relationships

Table 7-2 and Figure 7-6 show the markets served by the various modes. Heavy-duty trucks generally serve all markets, including the contiguous international markets of Mexico and Canada. Planes and airports serve national and international markets. The three major railroads operating in the region (Atchison, Topeka and Santa Fe; Southern Pacific; and Union Pacific) primarily serve interstate transportation needs, but a significant amount of traffic exists among Mexico, Canada and Southern California.

TABLE 7-2
MARKETS SERVED BY DIFFERENT MODES

Markets	Mode			
	Rail	Land	Water	Air
Local	-	Trucks	-	-
Intra (Sub)-regional	-	Trucks	-	-
Inter-regional: regions within the continental US	Freight Trains [§]	Trucks	-	Airlines and package express (UPS, Federal Express, etc.)
Regions outside the continental US--primarily international	Freight trains	Trucks	Tankers, bulk carriers, container carriers and general carriers	Airlines and package express.

§ Barring exceptions, freight trains haul goods from the SCAG region to regions only outside California.

MARKETS SERVED BY DIFFERENT MODES

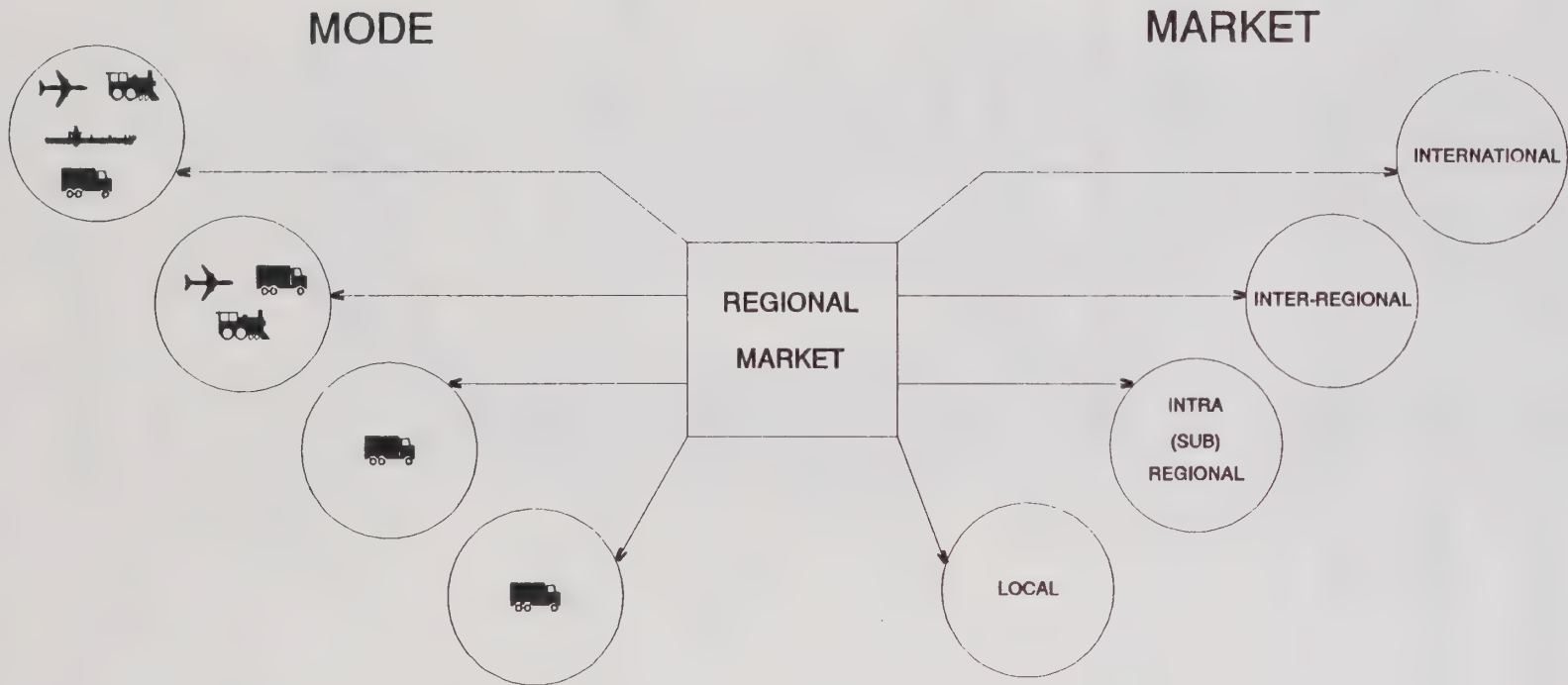


FIGURE 7-6

ISSUES AND IMPACTS ASSOCIATED WITH GOODS TRANSPORTATION

Issues

While the region's only mobility goal associated with energy is to reduce its consumption, energy choices and decisions influence all aspects of the region, notably: transportation system development, mode choice, business growth, competitiveness and location, environmental and community quality, and relationship of the SCAG region to trade partners and competing areas of the country and world (*see* Figure 7-7).

Increased government regulation has created the perception that the region is not business-friendly and business/regional economic competitiveness cannot be achieved/maintained.

Few resources are allocated to planning and programming for goods movement activities.

Land-use design and infrastructure development do not adequately accommodate the needs of goods movement.

Impacts

- Accidents and incidents on the region's affected roadways.
- Mode and system inefficiencies and conflicts.
- Environmental damage: The various air basins in the region are designated as non-attainment areas for various pollutants.

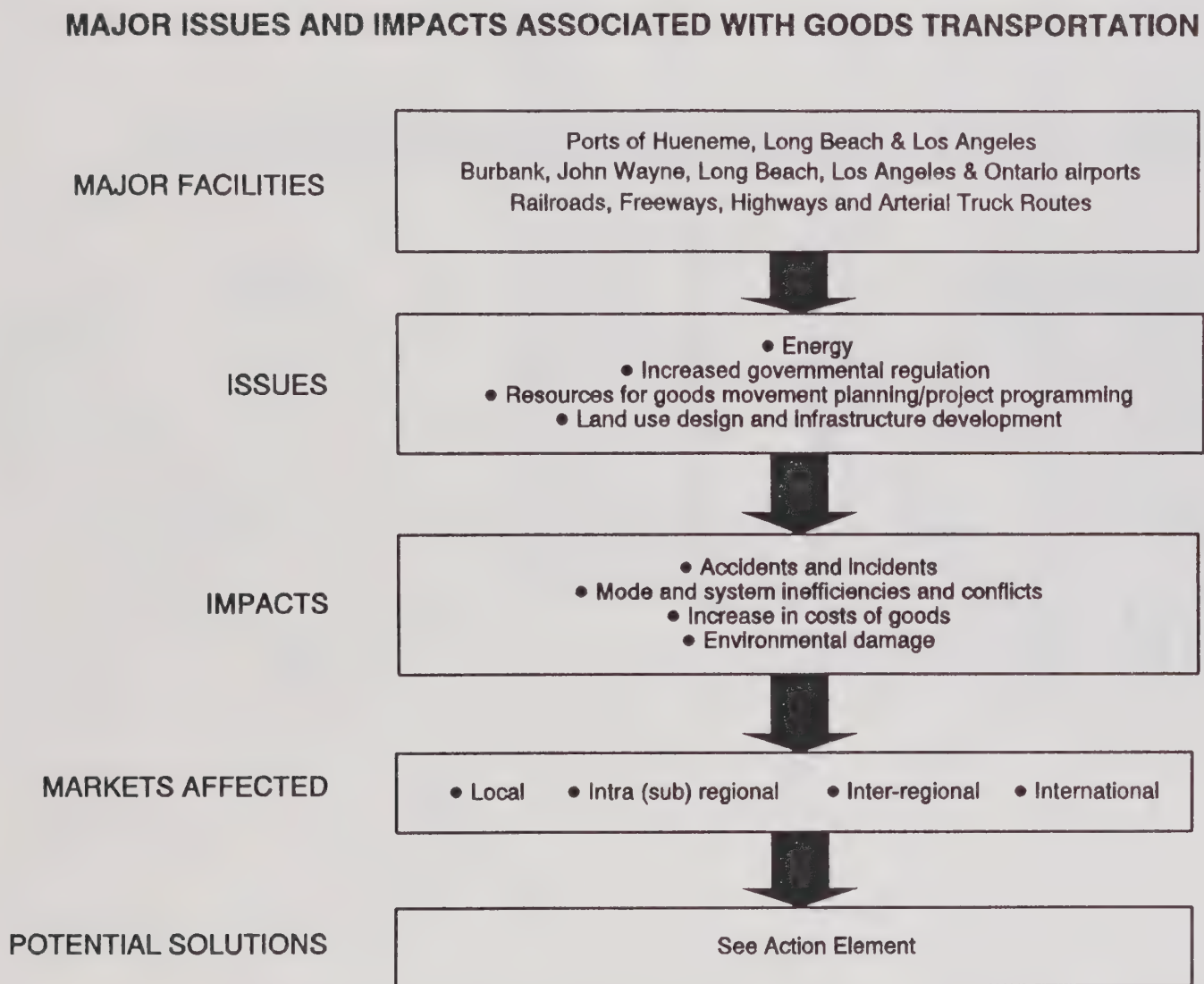


FIGURE 7-7

POLICIES

Transportation System Development, Use, Management and Safety

- Growth in the demand for goods movement will be accommodated through the provision of adequate multi-modal and intermodal infrastructure that is consistent with overall regional goals, objectives, and policies.
- Pricing strategies should be considered as one of the strategies to reduce peak period congestion.
- The feasibility of air cargo transport at all major air carrier airports in the region will be considered as a means to address growth in cargo volumes.
- Demand for increased goods movement will be given consideration in corridors where system connectivity and gap closures projects are being planned.
- The development and use of pipelines within suitable utility corridors or public rights-of-way will be encouraged.
- The siting, routing, and construction of pipelines will be conducted so as to avoid disruptions of sensitive environments, to improve the safety and reliability of the system and to protect ground water quality.
- The inter-regional and intra-regional transport of crude oil by modes which lower the risk of spills, reduce air pollution emissions and lessen consequences of spills will be encouraged.

Regional Economy, Mode Efficiency and Competitiveness

- The ports and major air carrier airports in the SCAG region are regionally significant and important trade links with the remainder of the world, and shall be supported as a major foundation of the regional economy.
- Arterial truck access routes will be coordinated for the purpose of improving system connectivity, eliminating circuitous routings and reducing delays.
- The potential for adverse impacts to mode shares and diversion of business to other ports will be considered in the development and implementation of local and regional plans.

Land Use

- Planning to accommodate multi-modal and inter-modal goods movement shall be an integral part of the land use and circulation elements of local government general plans and specific plans.
- Local governments shall consider requiring off-street dock facilities for all new buildings, and existing buildings that are approved for extensive renovation, sufficient to accommodate the shipping and receiving needs of such buildings.

SUBREGIONAL INPUT

As a part of the bottom-up planning process, subregional input provides information and recommendations regarding significant issues of concern on the parts of local jurisdictions. Table 7-3 depicts subregional input as related to the Goods Movement program.

TABLE 7-3
SUBREGIONALLY RECOMMENDED IMPLEMENTATION PROGRAM

Subregion	Issue	Recommendation
Imperial County Association of Governments	●FHWA and Caltrans are looking into the development of a State Truck Inspection Facility for vehicle weighing and agricultural products control.	<ul style="list-style-type: none"> ●Recognize the new Calexico East Port of Entry and the need for a SR-7 connection to I-8. ●Recognize the economic implications of the new Port of Entry. ●Support federal funding to expedite solutions to transportation problems in the vicinity of the new Port of Entry, namely the widening of SR-98 and the extension of SR-7 to I-8. ●Continue to be sensitive to Imperial County's unique planning considerations in the development of regional plans. ●Work with Caltrans, IVAG and Imperial County to provide a more detailed county transportation plan which highlights the future regional transportation projects.
Arroyo Verdugo	●The Burbank-Glendale-Pasadena Airport provides for the movement of goods and passengers in the subregion.	<ul style="list-style-type: none"> ●Goals & Objectives: Provide for the efficient movement of freight. ●Policies: Provide a transportation system that ensures the safe and efficient movement of people and goods.
Western Riverside Council of Governments	N/A	<ul style="list-style-type: none"> ●Goal: Develop a safe, affordable and efficient transportation system which provides access for the movement of goods, people and information to communities, employment centers, education, shopping, recreation and other important services. ●Goal: Support completion of an adequate roadway system which provides for the safe and efficient movement of people and goods in rural and developing areas.
San Bernardino Associated Governments	N/A	N/A

Subregion	Issue	Recommendation
<p>Southeast Los Angeles County Subregion</p>	<ul style="list-style-type: none"> ●The essence of the SELAC Core Strategy is to focus public and private sector energies on restoring a healthy and prospering economy by expanding the most promising clusters of existing economic activity in the SELAC area: world trade, goods movement and certain manufacturing sectors. ●SELAC is well positioned to play a key role in the region because of its pivotal location and critical connections to ports, rail lines and the freeway network. Of key significance is the fact that the region's goods movement system focuses on SELAC and adjacent South Bay: In particular, the Ports of Long Beach and Los Angeles, the Hobart Rail Freight Yards and the planned development of the interconnecting Alameda Corridor. 	<ul style="list-style-type: none"> ●A high priority should be given to planning and funding port facilities, Alameda Corridor improvements, truck routes, grade separations and other facilities which will expand the goods movement capacity of the Subregion and link it to nearby industrial areas slated for revitalization. ●Pursue additional funding for goods movement planning and implementation of capital improvements on a Subregional basis, particularly for facilities that have regional significance. ●Work with MTA and Caltrans to provide truck lanes or routes on or adjacent to freeways in order to reduce truck traffic congestion on the existing transportation system, emphasizing peak period relief and ways of avoiding disruption of local streets. ●Give priority to truck lane improvements on the I-710 Freeway. ●Identify methods of improving access for cities in proximity to the goods movement corridors and tie in with economic development activities to capitalize on convenient goods movement.
<p>South Bay Cities Association</p>	<ul style="list-style-type: none"> ●The Alameda Corridor and supporting transportation facilities should be treated as a top priority for funding and implementation support in the RME and the RTIP. ●LAX and the Los Angeles Harbor, including bus transit and goods movement facilities, should be treated as top priorities in the RME and the RTIP, with active Subregional involvement in shaping the plans for their operational expansion. 	<ul style="list-style-type: none"> ●Truck routing coordination should receive a high priority to insure that goods movement and other traffic are most cost effectively accommodated on the Region's transportation system. ●Manage the movement of goods and services, especially truck traffic; its impact on congestion and the health of the Subregional and Regional economies is critical. ●Identify projects of Regional importance (e.g. airports and harbors) and ensure that their expansion/construction and associated impacts are prioritized and sufficiently funded at the Regional level.
<p>Orange County</p>	N/A	N/A
<p>North Los Angeles County Subregion</p>	N/A	<ul style="list-style-type: none"> ●The need for efficient movement of people and goods within the Subregion should be considered.
<p>Coachella Valley Association of Governments</p>	N/A	N/A
<p>City of Los Angeles</p>	<ul style="list-style-type: none"> ●The City of Los Angeles is working with other jurisdictions on the Consolidated Alameda Corridor Transportation Plan. The purpose of the plan is to facilitate access to the Ports of Los Angeles and Long Beach through the year 2020 by consolidating rail movements into a single corridor between the Los Angeles Harbor and East Los Angeles Yard/Pasadena Junction, where goods can be distributed nation-wide. 	<ul style="list-style-type: none"> ●Freight transportation systems should be designed in a way to make them adaptable to changes in need of the service and industrial sectors. ●Smaller trucks with good loading/unloading systems can provide better service, have less of an impact on street and highway capacity, and create less damage and congestion in cases of accidents than the 18-wheelers.
<p>Ventura Council of Governments</p>	<ul style="list-style-type: none"> ●Ventura County has given great attention to goods movement, especially as it relates to improved port access at Port Hueneme. 	N/A

The efficiency of freight transportation via truck will be enhanced through improvements in the operating conditions on the region's regional streets and roads. As a part of the Regional Streets and Highways Program (Chapter 5), expansion of mixed-flow and HOV³ capacity and improved system management is recommended; arterial HOV facilities, Smart Corridors and application of advance technologies are endorsed for study and possible implementation where appropriate.

Relationship of Goods Movement Strategies to Congestion Management Programs

State statutes that authorized the creation of Congestion Management Programs (CMP) do not require that CMPs address goods movement activities and non-recurrent congestion. Thus, the adopted CMPs do not address issues directly related to goods movement. However, elements of the CMP do have potential for benefiting goods transportation insofar as the Capital Improvement Programs (CIP), Land Use Elements, TDM and Transit elements may lead to improved operation and management of the system for both people and goods. The CIPs are Congestion Management Agency input into the Regional Transportation Improvement Program for the SCAG region. The adopted CMPs were found to be consistent with the 1989 RMP and their respective CIPs were integrated into the Action Element of the RME (See Chapter 12, Preliminary Regional Action Plan).

ISSUES IN NEED OF FURTHER STUDY

Industrial development. Adequate funding to develop, operate and maintain the region's significant existing and proposed freight movement facilities could be key in revitalizing the region's economy and achieving long-term stability. Completion of the Alameda Corridor, for example, could form a core objective that solidifies the region's actions to help create jobs, to maintain trade links and to enhance the competitiveness of the region and the state. Other regionally significant major infrastructure as identified in the RME, would also be key in considering the economic stability and policy development for the region.

Energy. While the region's only mobility goal relative to energy is to reduce its consumption, decisions concerning energy help shape the region's economic base, transportation, land use development patterns, recreation, quality of life and the environment. In the absence of major energy crises, the risk that the region faces is not apparent. The type of energy consumed by residents, mobile sources and industry, however, will continue to determine the fundamental challenges that confront the region. Subregional decision-makers may want to focus on additional

³ Excludes heavy duty-vehicles.

Subregion	Issue	Recommendation
San Gabriel Valley	<ul style="list-style-type: none"> •The 10 and 60 freeways carry significant truck traffic. The industrial uses along the 60 encourage peak period congestion due to fixed work hours. 	<ul style="list-style-type: none"> •Policy: Support the development of a network of subregional principal transportation facilities which ensure the safe and efficient movement of people and goods to accommodate inter and intra-regional and subregional travel demand. •Policy: Minimize the regional and subregional truck traffic impacts.
Westside Summit Cities	<ul style="list-style-type: none"> •Goods movement is a major economic issue in the subregion. It is also a traffic circulation issue because of the high volume of pass-through truck traffic that the Westside experiences, due to its location in the middle of a highly urbanized county. •One of the major issues facing planning for goods movement is the lack of a regional or subregional database. More research will be needed on this issue to develop a coherent regional policy. 	<ul style="list-style-type: none"> •The general plan circulation elements of the Westside Summit cities include a mixture of priorities and policies both in support of efficient goods movement, as well as in support of appropriate mitigation measures for truck traffic. •Several cities do not have official truck route systems and have stated that a priority is to implement truck routes or restrictions in their cities. •The Westside Cities Subregion proposes to evaluate whether a unified truck route/restriction system is needed.

CONSTRAINED PROJECT ALTERNATIVE

Goods Transportation Site-Specific Recommendations

Site-specific and ground access improvements in the vicinity of the seaports and major air carrier airports in the region are recommended. Improvements are detailed in Chapter 12 - Preliminary Regional Action Program. The single largest facility and operations improvement identified is construction of the Alameda Corridor. Completion of the Alameda Corridor project is "the most important single transportation improvement project in the State; it has statewide and national significance; and the consequences of inadequate funding to implement the project would have disastrous economic consequences."²

Feasibility Studies. Several feasibility studies which address specific problems associated with goods transportation are recommended, including evaluating the congestion and air quality impacts of queued traffic at railroad crossings in the region; studying the economic feasibility of the phased elimination of at-grade railroad crossings of high traffic flow arterials; and conducting a study to examine the feasibility of pricing to reduce accidents, incidents and associated congestion on the freeways. It is also recommended that the feasibility of high-speed freight transportation be ascertained and that this issue be addressed in future studies of high-speed rail passenger service.

² Source: SELAC Subregional input to Regional Comprehensive Plan: Excerpts of speech by Mr. Daniel Wm. Fessler, President, California Public Utilities Commission; Member, California Transportation Commission, speaking at the TRANSCON 2000 International Conference: Future Transportation Technology, Palm Springs, California, October 25, 1993.

aspects of energy and how decisions and choices regarding energy can help achieve subregional goals and objectives.

Key issues involving energy and goods movement include:

- Fuel types and achieving air quality.
- Reducing dependence on fossil fuels for transportation and developing alternative fuel sources.
- Mitigating the direct adverse impacts of the energy decisions on jobs directly related to goods movement.
- Mitigating the indirect impacts of goods movement-related energy decisions on jobs, industry, business and residents.
- Reducing the impacts of current fuel sources for goods movement.

Public-private sector improvement initiatives. The relationship between the public and private sectors in Southern California is strained. The public sector could provide leadership in improving communication between the two and in considering strategies to address outstanding issues such as the following [The Intermodal Surface Transportation Efficiency Act (ISTEA) approach encourages partnerships between the public and private sectors in resolving critical issues]:

- Developing and funding important infrastructure such as the Alameda Corridor.
- Integrating goals for the region's energy and goods movement future into the framework for planning for the economy, transportation, the environment, land use, and quality of life.
- Establishing a national and state legislative agenda that promotes regional goals in the area of energy, goods movement, transportation, technology and the environment.
- Maintaining a competitive regional economy and strengthening links to global trade and domestic markets.
- Integrating advanced technologies and technology transfers that facilitate the intermodal transportation system.

Safety. Reduction in delay and congestion associated with vehicular accidents can improve mobility. Studies should be undertaken to determine ways to improve safety on the system.

INTRODUCTION/BACKGROUND

The SCAG region includes 56 public-use airports, which makes it the largest airport system of any region in the world (*see Figure 8-1*). The breakdown of these airports includes 44 general aviation (GA) airports, 10 commercial service airports, one closed military airbase for which civilian reuse has not been determined, and one military/civilian joint-use airport. The five urban airports that serve most of the region's aviation demand are Los Angeles International (LAX), Ontario International (ONT), John Wayne/Orange County (SNA), Burbank-Glendale-Pasadena (BUR), and Long Beach (LGB). *Palm Springs (PSP) serves urban areas in the low desert east of the Los Angeles basin. Palmdale (PMD) serves the Antelope Valley, and may relieve airports in the Los Angeles basin in the future if high-speed access can be provided.*¹

While the SCAG region is first in aviation activity compared to any other region, it has been beset by a number of problems. Foremost among them has been an expected shortfall in commercial airport capacity for both air passengers and air cargo. Further discussion of air cargo in the broader context of goods movement is presented in Chapter 7. This shortfall may be offset with the possible closure of two additional military air bases in the region.

Commercial airport ground access is another major concern. As airports reach their physical capacity, access infrastructure for passengers and cargo will become increasingly congested, so the need for inter-modal and multi-modal access strategies will increase.

The general aviation system is under increasing budgetary pressures as local governments experience the effects of recession. This is occurring during a period when the roles of general aviation airports are changing from recreational uses to more support for business and government use, and for emergency response to natural disasters and civil unrest.

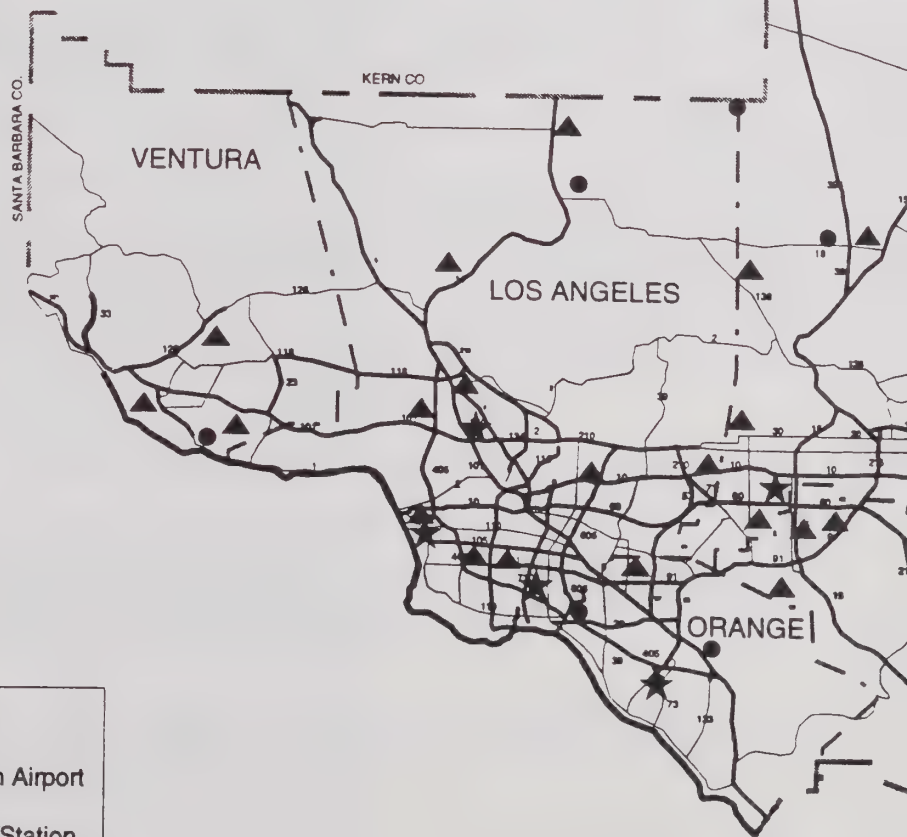
Another major concern is the strategic role of the aviation system in contributing to the economic recovery of the region and future economic development, particularly in relation to international trade.

During the past year, this chapter has been reviewed by SCAG's Aviation Technical Advisory Committee (ATAC) and by the Transportation and Communications Committee (TCC).

¹ Italicized narrative represents responses to comments on the July 1993 RME Discussion Document from the County of Orange, the City of Los Angeles, Department of Airports, the City of Palm Springs Regional Airport, and the City of Simi Valley.

1993 REGIONAL AIRPORT SYSTEM

1993 RME DRAFT



LEGEND

- ▲ General Aviation Airport
- Military Airbase/Station
- ★ Air Carrier Airport

Note: George AFB closed. Reuse is pending
Source: 1992 Aeronautical Sectional Chart



COMMERCIAL AIRPORT CAPACITY

INTRODUCTION/BACKGROUND

In 1988, commercial airports of the Los Angeles basin served 57.9 million annual passengers (MAP), roughly 13 percent of the total air traffic in the United States. By 1991 the same airports served 61.8 MAP. Currently, policy constraints limit the commercial airport system to serving fewer passengers than its physical capacity would allow.

Some immediate capacity relief may be provided by existing outlying airports. Palm Springs Regional Airport, for example, is a commercial airport that serves 430,000 passengers annually and has recently added runway capacity. Palmdale Plant 42 has authority for 400 commercial flights per day under a joint-use agreement with the Air Force, and may in the future provide relief for commercial airports in the Los Angeles basin. However, even with relief from these outlying airports, several commercial airports in the Los Angeles basin are expected to surpass constrained passenger levels during the next decade. LAX, it should be noted, went beyond its policy constraint in 1987.

RECOMMENDED GOAL

- Enhance airport system capacity to accommodate increased air passenger demand.

RECOMMENDED OBJECTIVES

- In the 1995 Regional Aviation System Study, identify multiple, short-term and long-term aviation-related strategies that are needed to solve/mitigate the capacity and congestion issues at existing airports.
- In the 1995 Regional Aviation System Study, identify non-aviation strategies to address capacity and congestion issues at existing airports.

ASSESSMENT OF NEEDS AND DEFICIENCIES

Demand pressure on the region's five metropolitan commercial airports is expected to increase dramatically during the next two decades. They are projected to serve 118 MAP by the year 2010, which represents a 91 percent increase over 1991 levels.

The adequacy of its commercial airport capacity is of great concern to the region, particularly in terms of reaching the Regional Mobility Element (RME) strategic goal of enhanced regional mobility for inter-regional travel. *While there have been infrastructure improvements at LAX and John Wayne Airport during the past 10-15 years and other improvements are planned for Burbank and Ontario, the existing airports will still experience a capacity shortfall.*

Efforts to locate new airport sites have been unsuccessful, as documented in the 1980 Aviation System Study and the 1991 Aviation System Study Update. *Remote sites are available, but must demonstrate that they have sufficient demand, carrier support, funding support, and technical feasibility.* Capacity shortfall for air cargo was documented in SCAG's Air Cargo Assessment as were options for increasing cargo capacity. Consequently, current efforts are focused on better utilization of existing airports in SCAG's Commercial Airport System Capacity Study. Another effort, the Military Airbase Contingency Study, is examining the civilian utility of ~~remaining~~ military air bases ~~in case they are~~ that are scheduled to be closed by the Department of Defense. *The bases should be evaluated as to the feasibility and desirability of upgrading them to commercial facilities. A later study should assess the costs and benefits of such an upgrade. The current study includes George Air Force Base (AFB), Norton AFB, and Marine Corps Air Station (MCAS) El Toro which have been or will be closed, and March AFB, which is scheduled for realignment and downsizing. Another study, to be completed in 1994, will examine the potential for joint-use at Naval Air Weapons Station (NAWS) Point Mugu.*

RECOMMENDED POLICIES

- Support the more efficient use of commercial airport facilities to serve growing air passenger demand in the region. Airport-generated noise, air quality and ground access impacts resulting from increasing air service should be mitigated.
- Each subregion should provide environmentally acceptable capacity within its own market area to meet local, short-haul air passenger demand *due to shorter access time of short-haul passengers.*
- Add the former Norton Air Force Base, now San Bernardino International Airport, to the SCAG regional system of civilian airports and forward that information to the FAA's National Plan of Integrated Airport Systems (NPIAS).
- For those military airbases, which are, or will be closed by the Department of Defense, support conversion to commercial air service if such bases have been determined to have a high

technical and market potential for use as commercial airports. This policy most strongly applies to those subregions which cannot otherwise provide sufficient, environmentally acceptable capacity to meet their own local, short-haul air passenger demand.

- *Examine the feasibility of commercial air passenger service at remaining active duty air bases if invited to do so by the military.*
- *Support outlying airports, such as Palm Springs, George AFB and Palmdale to serve their own market area. Also, examine high-speed access systems to attract passengers from the metropolitan areas of the Los Angeles basin.*
- *Support continued examination of new technologies and their potential impact on the aviation system, and its inter-modal connection to the rest of the Metropolitan Transportation System (MTS). This would include locational opportunities for tiltrotor service, and possible applications of high-speed rail. It would also include development of a multi-modal transportation demand model for various ground modes to assess their ability to attract air passengers.*
- Policy constraints on existing air carrier airports should be defined in terms on environmental impacts and should remain in place, except where relevant noise, air quality, and ground access impacts are mitigated.² Airport proprietors and/or the Regional Airport Authority are encouraged to reassess constraints to determine if additional service can be provided, but in no case should constraints be lifted until negative impacts are mitigated.

MOBILITY BENEFITS

The improved inter-regional mobility benefits of an enhanced aviation system have an enormous implication for the economic development of the region. The challenge of the enhanced system is to meet environmental requirements.

² Significant impacts other than noise, air quality, and ground access that might occur over and beyond existing policy constraints should also be mitigated.

COMMERCIAL AIRPORT GROUND ACCESS

INTRODUCTION/BACKGROUND

In 1982, SCAG adopted policies that support increased air service, but only if the resulting environmental and ground access impacts are mitigated. This was interpreted to mean that impacts associated with air service above policy constrained levels in 1982 would be mitigated.

The outcome of the mitigation policy was the Airport Impact Mitigation and Management Study, Phase I study (AIMMS), which was completed in 1985. That study contains an inventory of noise, air quality, and ground access impacts for the base year of 1982 and the forecast year of 2000. Later, consultants to SCAG prepared a comprehensive list of mitigations for each impact category, which are contained in the 1990 Phase II report.

The AIMMS studies, and others conducted by local agencies, have focused predominantly on highway facilities. However, state law now requires multi-modal ground access studies for all commercial airports, and the federal Intermodal Surface Transportation Efficiency Act (ISTEA) emphasizes the need to assess airport ground access in the context of regional intermodal access of the MTS as a whole. Consequently, detailed intermodal studies and transportation modeling will be conducted by SCAG for all five commercial airports. The first of these studies is for LAX and began in 1993. These studies will follow guidelines for the ISTEA Inter-modal Management System.

RECOMMENDED GOAL

- Provide adequate intermodal ground access for air passengers and air cargo to the region's commercial airports so that they can fulfill their transportation and economic functions.

RECOMMENDED OBJECTIVES

- By 1995 to conduct adequate intermodal and multi-modal analyses of ground access to the region's five metropolitan commercial airports.
- Provide an environmentally compatible ground access system and to meet all air quality standards.

ASSESSMENT OF NEEDS AND DEFICIENCIES (FINDINGS)

The consultants to the AIMMS study identified three tiers of roadway improvements for each airport area and prepared cost estimates for them. Needed roadway improvements will be updated in upcoming modeling and airport access studies. However, they will only be one component of the access studies; other components will include transit, Transportation System Management (TSM) and Transportation Demand Management (TDM).

Findings

Even though there are serious limitations to the AIMMS data, a number of observations can be made that will be relevant to future airport ground access studies.

- A wealth of traffic and engineering studies have been produced for the highway element of ground access at all five commercial airports. However, much more work is needed for transit, rail, TDM, TSM and the intermodal connectivity with the rest of the MTS.
- Total congested lane miles at the five airports would increase from 222.3 in 1982 to 466.0 by year 2000, which is a 109.6 percent increase. While these figures do not account for recent developments, they suggest a significant increase in congestion by 2000 and imply an even greater increase by 2010. These increases in congestion highlight the need to emphasize non-auto strategies for improving airport ground access.

RECOMMENDED POLICIES

- In accordance with state law (Assembly Bill 2487), SCAG will conduct multi-modal and intermodal ground access studies of the region's commercial airports for each update of the Regional Transportation Plan (RTP).
- Traffic impacts generated by significant new off-airport development should be mitigated if they worsen ground access to a commercial airport and reduce that airport's operational capacity. This especially applies to those areas where the commercial airport is host to nationwide and international air service. *This type of mitigation should be a condition of project approval.*
- Traffic impacts generated by non-aviation developments on-airport should be mitigated through prudent planning. Such development is encouraged for revenue purposes, but only if it

utilizes excess capacity not needed for aviation purposes.

- *SCAG, in cooperation with appropriate transportation agencies, should ensure that airport-related ground access projects are placed in the Regional Transportation Improvement Program (RTIP). It is important to include airport planning staff in the identification of airport-related projects, especially those which link directly to the airport roadway system.*
- *Support development of a multi-modal transportation demand model which integrates various ground transportation modes.*

MOBILITY BENEFITS

LAX is the region's gateway to the rest of the world, particularly the Pacific Rim. It is also the gateway to the rest of the nation. In those two roles, it provides invaluable mobility for the region's citizens and is a significant factor in the regional economy.

The subregional airports provide mostly intra-state mobility, which is invaluable in terms of mobility and the economy. They also serve more local air passengers, and take pressures off LAX and its ground access system.

COMMERCIAL AIRPORT AIR CARGO

INTRODUCTION/BACKGROUND

The shipment of freight by air is a growing phenomenon in the SCAG region. It parallels the region's increased integration into the global economy, the growing importance to that economy of quick and reliable freight movement, and the expanded production of high-value and time-sensitive products. Airborne exports have become increasingly important to the region's economy, as evidenced by the fact that the total value of airborne exports shipped out of the Los Angeles Customs District now exceeds the value for waterborne exports.

During the past 12 years (1979-91), cargo volumes at the five air carrier airports in the region have increased by about 72 percent, from about 922,000 tons to about 1.5 million tons. It is interesting to note, however, that even during this recessionary period, international air cargo volumes increased by 19 percent during the first nine months of 1992. Because of ongoing structural changes in the economy, total air cargo volumes are expected to rise once again when recessionary conditions abate. Projections made by a recent SCAG study, Air Cargo in the SCAG region, indicate that volumes are expected to reach 2.7 million tons by the year 2000, and 4.8 million tons by 2010. Commercial airport capacity to handle air cargo will only reach 3 million tons by year 2000, so there will be a shortfall of capacity after that. Closing military air bases may ease that capacity shortfall.

RECOMMENDED GOAL

- Enhance air cargo handling capacity to serve demand and reduce congestion.

RECOMMENDED OBJECTIVES

- Quantify major trends in the air cargo industry since the advent of deregulation in 1979.
- In the 1995 Regional Aviation System Plan, recommend measures to reduce projected shortfalls in cargo handling capacities by enhancing the cargo handling efficiencies of existing cargo facilities.
- Recommend measures to reduce projected shortfalls in cargo handling capacities by adding major capacity increases to the existing system in the form of new or converted airports, or military airports if they became available.

ASSESSMENT OF NEEDS AND DEFICIENCIES (FINDINGS)

The results of the recent air cargo analysis indicated the following:

- Existing and currently planned cargo handling capacity in the region are able to accommodate projected year 2000 cargo volumes. However, existing and planned capacity falls short of meeting the 2010 projection by about 63 percent.
- The greatest need for new cargo handling capacity in the region is to serve Orange County, not only to provide additional needed capacity, but also to minimize trucking impacts on the regional highway network associated with transporting cargo from Orange County manufacturing centers via truck to other airports. Since John Wayne Airport has very limited capacity potential to serve air cargo, other alternatives should be examined.

RECOMMENDED POLICIES

- Support development of a comprehensive strategy to find additional air cargo handling capacity in the region to reduce projected shortfalls in that capacity. A regional strategy should locate potential additional capacity as close to where cargo is produced as possible, and should evaluate the feasibility and relative effectiveness of new airports, conversion of military airports to commercial uses, and increasing cargo handling efficiencies at existing airports.
- *Ground freight routes should be planned that minimize impacts upon residential neighborhoods and heavy commuter routes.*
- *The conversion of Norton AFB to civilian/commercial use is a most promising alternative for adding substantial new cargo handling capacity to the regional airport system.*
- For those military airbases that are, or will be closed by the Department of Defense, support conversion to commercial air service, including air cargo, if such bases have been determined to have a high technical and market potential for use as commercial air passenger and air cargo service airports. This policy most strongly applies to those subregions that cannot otherwise provide sufficient, environmentally acceptable capacity to meet their own local air cargo shipment demand.
- *Examine feasibility of commercial air cargo service at remaining active duty air bases if invited to do so by the military.*
- Long-term trends in the regional economic profile of Southern

California, their relationship to the world economy, and their implications for air cargo forecasts and handling capacity shortfalls, should be explored in an aviation strategic plan for the SCAG region.

MOBILITY BENEFITS

The primary mobility benefit that would potentially result from the implementation of the study's recommendations would be increased number of air passengers that could be served through the more effective use of available airport capacity, as well as future capacity increases such as the conversion of Norton AFB to a major air cargo facility. Since airports would also be less congested, there would also be fewer flight delays and less passenger inconvenience. This is in recognition that all of the air carrier airports in the region are ultimately subject to capacity constraints, and that there is competition between cargo and passenger flights for available airport capacity.

Another potential mobility benefit would be the reduction of impacts of cargo-carrying trucks on the regional highway system, resulting from locating additional cargo handling capacity close to where the cargo is produced. In particular, the location of new cargo-handling capacity near manufacturing centers in Orange County would have significant beneficial impacts on surface transportation mobility.

INSTITUTIONAL ISSUES

INTRODUCTION/BACKGROUND

An airport may at once be a local, regional, national, and international asset. For many years, there has been a policy question as to which of these levels should predominate in planning for and operation of commercial airports.

Local communities affected by busy airports have emphasized the need for local participation in the mitigation of environmental and ground access impacts. While there has been progress in mitigating impacts over the past decade, particularly in the area of aircraft noise, environmental concerns remain for a number of affected communities.

The business community has generally emphasized the regional, national, and international aspect of commercial airports in their role as generators of economic activity. This role is of growing importance during the prolonged recessionary period experienced in the SCAG region. The

importance of the role of commercial airports in economic recovery is presented in the Aviation Strategic Element of this chapter. However, to fulfill this economic role, commercial airports must accommodate the demand for increased air service which generates impacts of concern to local communities.

A number of mechanisms have been developed to achieve a balance between airport growth and environmental mitigation. In terms of noise, the Federal Aviation Administration (FAA) developed the Federal Air Regulation (FAR) Part 150 Noise Study program which included the participation of adjacent local jurisdictions. Part 150 studies were conducted for LAX, Burbank, Long Beach, and Ontario airports. These studies satisfied some communities, but not others. In addition, some local jurisdictions felt excluded from the Part 150 process and seek a mechanism to address their concerns. In other cases, local concerns resulted in environmental lawsuits which produced mixed results. SCAG has occasionally functioned as a mediator, but has no statutory authority in the area of airport noise.

In terms of air quality mitigations, SCAG does have a statutory role in the development of aviation Transportation Control Measures (TCMs) which appeared in the 1989 and 1991 Air Quality Management Plan (AQMP). The TCMs necessarily relate to airport ground access which is another area where SCAG has a role. SCAG is now required by state law to conduct multi-modal airport ground access studies as noted earlier in this chapter.

The mechanisms noted above and others have brought satisfaction to some communities, but not others. This is particularly the case in terms of airport noise. A number of local elected officials have indicated that an adequate mechanism has yet to be developed to address their concerns, and that this issue needs to be acknowledged.

GENERAL AVIATION AIRPORT SYSTEM

INTRODUCTION/BACKGROUND

The primary focus of SCAG's aviation planning has traditionally been on the commercial airport system. However, the system of 44 general aviation airports in the SCAG region is the largest regional system in the world, and is deserving of SCAG's attention. This general aviation system is predominantly represented on SCAG's Aviation Technical Advisory Committee (ATAC). All airports in the region are represented on ATAC, which is one of the longest-standing and most active of SCAG's committees. Collectively, general aviation and commercial airport managers have made immense contributions to SCAG's aviation planning during a very long period of time.

The last SCAG General Aviation System Study was completed in 1987. A data update of the region is urgently needed, to verify trends that appear to be underway, and to formulate regional policy to guide the system in the future. A general aviation study began in the summer of 1993, and is under the guidance of ATAC. The resulting general aviation plan will identify capital needs, funding shortfalls, and new roles which general aviation airports could pursue.

AVIATION STRATEGIC ELEMENT

INTRODUCTION/BACKGROUND

In economic terms, the SCAG region is one of the largest metropolitan areas in the world. In 1991, the gross regional product of the SCAG region was \$331 billion, making this region the 10th largest "nation" in the world economically. A few of the economic issues are described below and could be included in the Aviation Strategic Element. Accordingly, it has important financial, technical, social, and political relationships with other large economic regions in the world. All these relationships have implications for air travel and airport infrastructure, but they have never been studied in a systematic way. There is a need to assess and examine these relationships to better understand and formulate regional policy to guide the aviation system during the next two decades. That assessment would result in an Aviation Strategic Element of the regional Aviation System Plan, which is part of the RME. The following is a short description of some of those relationships that need to be examined.

Airport Capacity and Air Service Implications

- The capacity of commercial airports is nearing physical limits in this region, but also in other metropolitan regions in this country, around the Pacific Rim and in parts of Europe. What are the implication for the air movement of people and goods, and what are the implications for the regional economy and growth? Also, what implications does this have for closing military air bases?
- Considerable additional airport capacity will be made available at the new Denver Airport and at the potential new international airport on the U.S.-Mexico border south of San Diego. Other capacity remains at existing airports in the San Francisco Bay area and Portland. What are the implications for the production and movement of air cargo? Does this portend the shift of production from the SCAG region to other regions?
- How does the commercial airport system benefit the regional economy and job creation? How does the benefit compare to the cost of investment in airport infrastructure?
- Commercial air routes from Pacific Rim countries over the former Soviet Union to Europe are currently being negotiated. Since those routes are more direct and are shorter, will Pacific Rim air traffic bypass the U.S. and the SCAG region? What are the implications for the regional economy and trade?
- International air service for both air passengers and air cargo is the fastest growing component of air service and travel demand in the SCAG region. Will LAX be able to handle all of the international air service or will the other commercial airports need to accept international flights in the future? *While it is recognized that not all subregional commercial airports can accommodate international service it may be important to identify which ones can. It may also be important to identify which of the closing military airbases can handle international service.* What are the implications for Customs service and additional Customs districts? Will domestic service at LAX have to be constrained to accommodate the international traffic? Will the subregional airports need to host more medium- and long-haul service?

Economic Implications

- The SCAG region has many economic ties with other regions in the Pacific Rim, Canada, Latin America and Europe. What are the major economic trends in these other regions and what is the nature of their ties to the SCAG region? What is the future for

international commerce and tourism between the U.S. and its international trading partners? What are their implications for commercial airports and air service in the SCAG region?

- The North America Free Trade Agreement (NAFTA) may soon be ratified. What are the long-term economic implications for Southern California, particularly in terms of economic development in Mexico? How will this affect the potential new U.S.-Mexico international airport and commercial airports in the SCAG region? How might it affect air cargo commodity production and movement in the SCAG region? What percentage of the cross-border cargo movement stimulated by the agreement will move by air versus trucks?

Technology Implications

A number of new technologies are now being implemented and others are on the horizon. They all have implications for the aviation system, a few of which are noted below.

- The Global Positioning System (GPS) is a multiple satellite system now being put in place. Its accuracy will revolutionize the air navigation system and precision approaches. What affect will GPS have on airspace and airport capacity?
- Some aircraft manufacturers have indicated their desire to produce a mega-airliner (800-1,000 seats), although currently there is no movement in that direction. Will economic recovery of the airlines and a shortage of airport capacity lead to renewed interest in the mega-airliner? Will such an aircraft significantly increase the air-side capacity of the region's airports? Can the airports accommodate such an aircraft?

ISSUES IN NEED OF FURTHER STUDY

As the SCAG region's airport system moves through the next two decades, it will experience major problems, but it will also provide significant opportunities for the larger community. In that context, the following outstanding issues should be addressed in SCAG's aviation planning program.

- The provision of adequate commercial airport capacity will continue to be the major challenge for the region's airport system. After the year 2000, the system will gradually experience a shortfall of capacity for serving both air passengers and air cargo. Further studies need to examine the implications for high-speed rail, remote airports, and the reuse of closed military air bases.
- As the commercial airports near their physical capacity, ground access traffic congestion will worsen and may become the constraining factor in airport operations. Further airport ground access analysis and modeling are needed to identify appropriate multi-modal and inter-modal solutions.
- General aviation airports in the region's airports system are experiencing the same fiscal pressures as local governments. SCAG's current general aviation study will examine how these airports can survive financially and what emerging roles will reinforce their value to the community.
- During the next two decades, the SCAG region will experience dynamics resulting from airport capacity limitations, competition from airports in other regions and changing international relationships. There is a need to develop an aviation strategic element to assess these larger issues. One of the key issues is how to enhance economic opportunities generated by the commercial airport system.

INTRODUCTION/BACKGROUND

To meet mobility needs beyond the year 2010 it is likely that future long-range corridors will need to be identified and preserved in the SCAG region. Long-range corridors are defined as locations beyond the year 2010 where potential multi-modal transportation facilities might be built or sites that may be enhanced by adding facilities to increase the multi-modal nature of the corridor.

This chapter highlights the importance of identifying future multi-modal transportation corridors and setting aside the necessary right of way, especially in areas where development may block an identified long-range corridor. Figure 9-1 provides a general description of corridors that have been identified and discussed through a variety of study efforts.

EXISTING SETTING

An early long-range corridor identification effort occurred in 1986-87 when SCAG, Riverside County Transportation Commission, San Bernardino Associated Governments, and Caltrans District 08 met to define long-term transportation needs for the urbanized portions of Riverside and San Bernardino counties. From 1988-89, SCAG's Overall Work Program set forth a program to expand the earlier long-range corridor identification effort. The Inland Empire Long Range Corridor Study is ongoing and completion is expected in the fall of 1993.

Other corridor identification efforts include studies completed by county transportation commissions e.g., the Sierra-Cedar, the North-South, and the Cajalco Corridor studies. Caltrans through their system management plans have also identified future multimodal and intermodal corridors and longterm gaps.

Depending on the degree of urbanization the application of different long-range corridor strategies is foreseeable. In the highly urbanized portions of the SCAG region, long-range corridor projects that enhance existing corridors requiring the acquisition of little right-of-way or using abandoned railroad lines are probable approaches. In the less-urbanized areas, more possibilities exist to identify and preserve new long-range corridors. Local governments have an opportunity to capitalize on preservation efforts, before urbanization reduces the availability of land for new transportation facilities, especially in areas that already have insufficient transportation capacity but are continuing to grow. Early efforts to identify and preserve right of way will reduce costs and minimize the difficulties of developing a corridor.

POST 2010 LONG RANGE CORRIDORS 1993 RME DRAFT

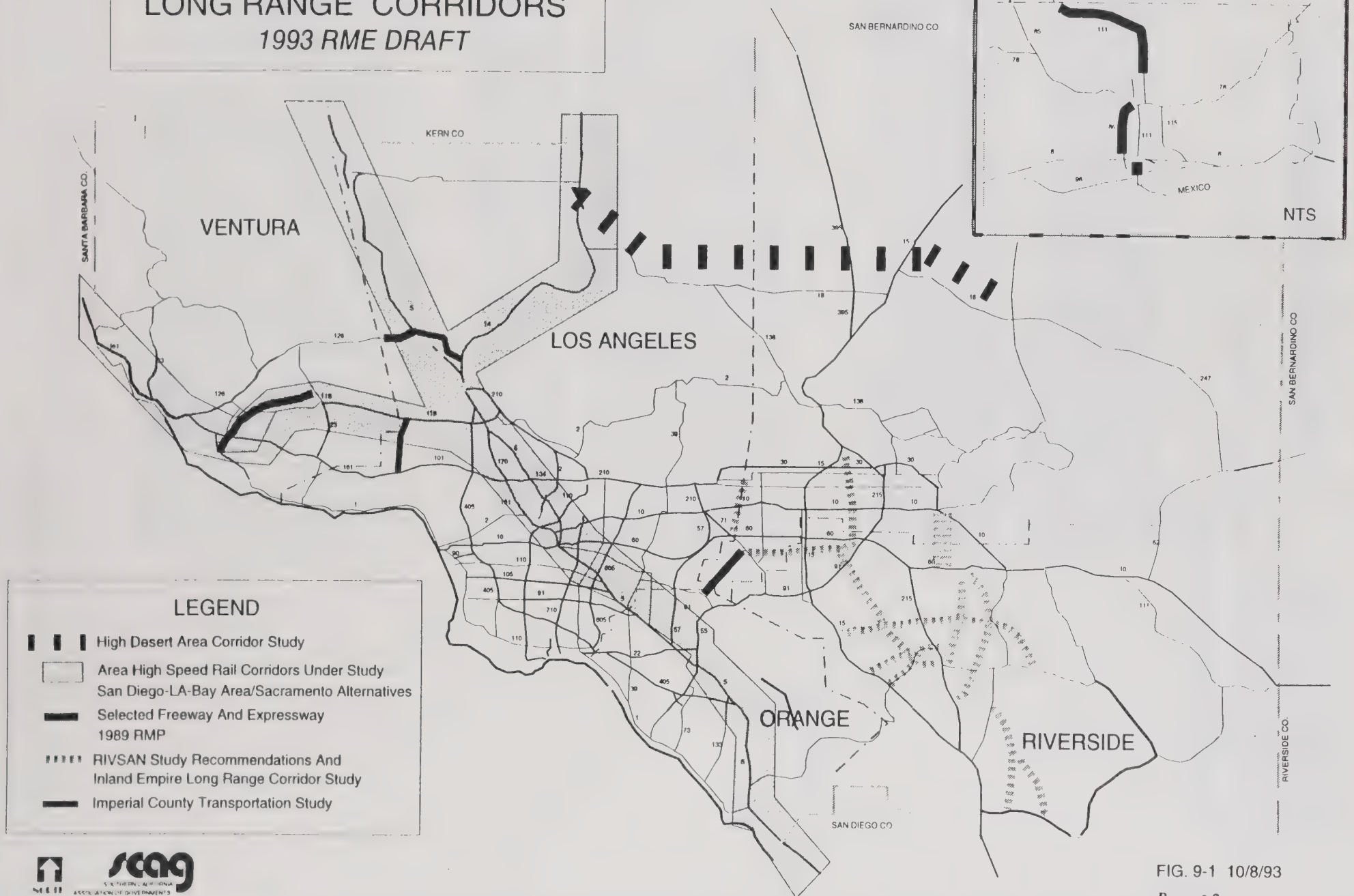


FIG. 9-1 10/8/93

POLICIES

Guiding policies toward the development of long-range corridors include the following:

- Support long-range corridors that will employ multi-modal and intermodal strategies designed to maintain mobility for people, goods, services, and information in ways that are safe, efficient, cost effective, meet environmental mandates, and foster economic development.
- Support long-range projects and right-of-way preservation programs that foster the development of an urban form conducive to reducing single-occupant vehicle trips.

ASSESSMENT OF NEEDS & DEFICIENCIES

Reports such as the Los Angeles County Transportation 30-Year Integrated Transportation Plan, Imperial County's Transportation Plan, the Orange County Transportation Authority's Long-Range Transit Systems Plan and Development Strategy, plus the Orange County 2020 Vision (presently being drafted) illustrate the type of long-range corridor concepts that will need to be included in the region's future mobility plans. To develop these types of corridors there will need to be more linkages between land use planning and transportation planning efforts. At present there are limited provisions at the local level for this type of coordination, especially with regard to preserving right-of-way. Regardless of how difficult the process, the future economic well-being of this region is dependent on how well post 2010 transportation needs are addressed.

RECOMMENDATIONS

Given the number of long-range plans focused at the county level, a regionwide post-2010 long-range corridor study is needed to provide a broader perspective of future needs. This effort should focus on the identification of corridors, the protection of right-of-way, and the development of the institutional framework to formalize the process. This effort will require developing criteria that guides the identification and prioritization of corridors and will involve considerable consensus building amongst competing public and private interests.

Implementing the recommendations presented above would probably best be served by first developing a public information program that details the importance for local governments and subregions to proactively develop a long-range corridor strategy. A first step would include identifying studies done at the local level or other area, corridor, and

subregional studies that identify long-range needs. In addition, the long-range corridor effort should also involve the identification and setting aside of ROW for utility, communication, and freight corridors.

MOBILITY BENEFITS

The identification, prioritization, and implementation of projects on post-2010 corridors provides the opportunity to develop multimodal and intermodal transportation systems that can provide benefits over present-day efforts constrained by managing congestion with limited resources. In the highly urbanized portions of the SCAG region, the enhancement of transportation corridors that move people and goods more efficiently with less reliance on the single-occupant vehicle will produce significant mobility benefits in this auto-oriented environment. In the less urbanized areas, the opportunity exists to develop corridors that meet a variety of transportation needs but may also influence the development of an urban form that will substantially improve all aspects of mobility.

ISSUES IN NEED OF FURTHER STUDY

- What additional corridors should be included?
- What are the appropriate actions to preserve identified corridors?
- What are the priorities of these corridors for the implementation of transportation facilities and services?
- What are the financial and mobility benefits for the early identification and purchase of right of way?

CHAPTER TEN: FINANCIAL PROGRAM

INTRODUCTION

The 1989 Regional Mobility Plan (RMP) (for the period 1990 through 2010) forecast transportation capital revenues of about \$21 billion against planned capital expenditures of about \$44 billion thus identifying a \$23 billion deficit. In addition, the 1989 RME projected an annualized operating and maintenance shortfall of almost \$3 billion. Under the planning "ground-rules" existing at that time, there was no need to balance expenditures and revenues. The 1989 RMP did not identify specific ways of meeting the projected deficits although it did offer suggestions.

Enactment of the federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) changed the playing field. Under the new requirements, the Plan must do the following:

"Include a financial plan that demonstrates how the long-range plan can be implemented, indicates resources from public and private sources that are reasonably available to carry out the plan, and recommends any innovative financing techniques to finance needed projects and programs, including such techniques as value capture, tolls, and congestion pricing."¹

"REASONABLY EXPECTED" OR "INNOVATIVE"

The language of ISTEA states that "innovative" financing techniques may be recommended in the Plan. For a funding technique to be considered "innovative," the technique must **not** be in the implementation process, or approved for implementation, in the SCAG region as of the date of Plan adoption. For example, tolls will not be considered innovative since they are currently approved for implementation within the SCAG region. Congestion pricing techniques will be considered innovative since they have not been approved anywhere in the SCAG region. Innovative financing techniques will be evaluated against the criteria for determining reasonably expected. *While Innovative Techniques do not require a YES to all criteria, decision-makers should consider the evaluation in determining if the funding technique should be recommended in the Plan.*

Discussions with Federal Highway Administration officials suggest that while they will accept local decisions with respect to reasonably expected

¹ ISTEA (23 USC 134 et seq.)

- Has the state or federal government taken action required as a prerequisite or condition for enabling the resource by the time of Plan adoption?

In order for a funding measure/mechanism to be considered "reasonably expected," each of the criteria must be answered YES or NOT APPLICABLE. Funding sources used to establish revenues have been subjected to the criteria and only those funding sources that have received a YES have been included in setting revenue estimates.

EXISTING REVENUE SOURCES

Under the working criteria for reasonably available, the following sources of funds are considered "Reasonably Available."

Federal Revenues

- Federal Fuel Tax (through Highway Trust Fund) (Portion allocated to Transportation) Will continue at current rate through authorized period.
- General Funds will continue at current levels. The two foregoing sources provide the funds for the following ISTEA programs:
 - Interstate Completion, National Highway System, Surface Transportation Program (STP), Congestion Mitigation and Air Quality (CMAQ), Federal Lands, Federal Transit Section 3 Discretionary, Federal Transit Sections 9, 16(b)2 and 18 Formula, Federal Lands

State Revenues

- State Fuel Tax will continue at rate authorized by statutes approved as of 1993.
- General Funds will continue at current levels.
- State Transit Bonds assumes \$3 billion as approved by voters in 1990 (Prop. 108, 116).
- Registration/Weight Fees will continue at rate authorized by statutes approved as of 1993.
 - The foregoing state revenue sources fund the following State Transportation programs:

- Local subventions, TSM, State-Local Partnership, Enhancements, Maintenance and Rehabilitation, Flexible Congestion Relief, Soundwalls, Interregional Roads

Local Revenues

- Transportation Development Act (TDA) will continue for entire plan period.
- County Sales Tax Measures will continue for entire plan period (through 2015) for Los Angeles County and through authorized life (through 2010) for Imperial, Orange, San Bernardino, and Riverside Counties.
- County Bond Measures. Any county bond measures currently authorized by voters are considered reasonably expected even if actual bonds not marketed
- Private Bond Measures. Any private bond measure currently authorized by the required private organizations are considered reasonably expected even if actual bonds have not been marketed.
- Benefit Assessment District Revenues. Any revenues being received from currently authorized benefit assessment districts are considered reasonable and will continue
- Development Fees. Current agreements for Development Mitigation Fees are considered reasonably available
- Toll Roads. Tolls from roads/projects currently open, under construction, or planned, which have legally complete and enforceable agreements, will be considered reasonably expected.

POTENTIAL REVENUE SOURCES

The following revenue sources are not considered reasonably available at this time. Upon further analysis, some of these may move into another category.

- Additional or New Local Sales Tax(es) for Transportation
- Increases in the Federal Fuel Tax
- Increases in the State Fuel Tax
- New Bond Measures

- New Tolls on roads/projects not subject to legally complete and enforceable agreements.

INNOVATIVE REVENUE SOURCES

The following revenue sources do not currently exist within the SCAG region. While they have potential for meeting the reasonably available funding criteria and being implemented during the time frame of the RME and the RTIP, they do not currently meet the criteria. These sources should be monitored for their potential for meeting the criteria. These and other sources should be studied, pursued, and developed in accord with other recommendations of the appropriate SCAG committee such as TCC, Implementation, Market Incentives Task Force, and Technology Task Force.

- Emissions Fees
- Congestion Pricing Fees
- Tariffs
- Accident Reduction Fees
- "Pay at the Pump" Funding (e.g. for Insurance)

The ability to finance transportation improvements in the SCAG region has increased greatly in the few years since the 1989 RMP was adopted due to increased federal funding authorizations under ISTEA, enactment of the California "Transportation Blueprint" in 1989 and subsequent statewide voter approval, and enactment of additional 1/2% sales taxes in five SCAG counties. Assuming the maintenance at current levels of local, state, and federal resources throughout the plan period at current levels, revenues are reasonably available to finance the "Constrained Alternative" 2B the Regional Mobility Element. All cost and revenues discussed in this section are summarized in the Table 10-1.

As stated earlier, the 1993 Financial Plan is significantly different from the plan in the 1989 RMP in that the current version must be financially constrained. That is, funds to support programs and projects included in the plan must be reasonably available. The programs and projects of the 1993 RME are collectively subjected to air quality conformity requirements. As such, there is a legally binding commitment to implement the programs and projects. Lack of funding may not be used as justification for not implementing those portions of the plan subjected to the conformity testing.

Matching projected revenues against projected costs over a twenty year period is extremely complex given the current fiscal environment. For

example, estimates of revenues and costs naturally have a built in assumption that the "project," "plan," or program is well defined and will not change over the forecast period. Unfortunately, this is not the case in Southern California. The usual (historical) trends in the economy are not being followed. California, somewhat immune to a recessionary environment in the past, seems to be hit harder than during previous cycles. Various earmarked funds for transportation are being examined for other purposes. On the cost side, more and more of the existing capital facilities of the transportation system are reaching the twilight of their useful life. Costs for maintenance and rehabilitation are rising. Following the Loma Prieta earthquake and the collapse of the Cypress Viaduct in the Bay Area, the State has embarked upon a very significant seismic safety rehabilitation program. It has proved more costly than anticipated and more roadways are affected than previously thought.

Table 10-1 illustrates a \$5 billion gap between projected revenues and costs. This deficit is a **regional deficit**. Tables 10-2A through 10-2F will illustrate County summaries when completed. **The projected deficit is not acceptable and discussions are underway to determine what steps are needed to produce a Plan which can be adopted.** It should be understood that while projections of actual cash and restrictions on the use of certain funds may leaves gaps in funding for specific program categories, the bottom line is that Plan as a whole must be in balance. For example, if transit operating costs exceed projected revenues, it may be acceptable to utilize surplus funds from another category to reach a balance. This analysis is also underway.

It is also possible that the overall revenues will decline as revenue projections are revised to reflect actual figures. As well, costs may increase if the adopted Plan adds projects to the Constrained Alternative rather than forcing a trade-off between projects.

REVENUE FORECAST

As with the 1989 plan, the financial summary presented here relies on revenues derived from federal, state, and local sources. While the involvement of each sector remains strong, it is important to note the significant effort made by the several local governments involved to finance improvements to, and maintenance of the transportation network.

Federal Share

The 1991 ISTEA defines federal participation in transportation financing. The Act is significant in several ways, including the added flexibility in the use of funds. This attribute is considered essential in heightening the efficiency of transportation investment. Also, the ISTEA recognizes the relationship between transportation and air quality policies. To this end, the ISTEA contains funds within the Congestion Mitigation and Air

Quality Program (CMAQ) to overcome the negative effects of the transportation network.

ISTEA provides roughly 110 percent of the funding available from the previous six-year period. The RME forecast assumes the same level of funding, less inflation, through the plan period. These funds are then anticipated to be distributed within the state based on the existing north-south split and county minimum allocations. Based on these assumptions, about \$14.3 billion will be available to the state from FHWA and FTA sources during the plan period.

Additionally, federal funding from the Federal Aviation Administration (FAA) and the Federal Railroad Administration may be available to finance portions of the Metropolitan Transportation System. These funds are currently not included in the Revenues and Costs of Table 10-1.

State Share

State revenues continue to reach the region through existing funding programs, including programs for system management, congestion relief and transit assistance. Also available is funding from Propositions 108 and 116. The latter, Proposition 116, authorizing the state to assume \$1.99 billion in long-term debt, was not anticipated in the 1989 RMP. Proposition 108, in addition to authorizing \$1 billion in debt, was the first of three such measures authorized by the California Legislature. The second of these measures to come up, Proposition 156, was defeated by the voters in 1992. However, the financial projections included here assume that funding covered by this proposition will be provided through a subsequent action by either the Legislature or the electorate. This assumption is based on the estimates of various funds, developed every two years and adopted by the California Transportation Commission.

Although some state transportation resources are derived in part from general taxation, the majority of transportation funds are gained from the state gasoline tax and motor vehicle license fees. The assumption that state funding will continue, less inflation, is made without regard for how the revenues are generated. It is strongly recommended, however, that the state continue to rely on the gas tax as a source of revenues, and that steps be taken to ensure a constant stream of funds, considering greater fuel efficiency standards and transition to alternative fuels.

With the assumptions stated above, it is expected that approximately \$13 billion will be available in the region from the state.

California statute (SB 707) requires that Regional Transportation Planning Agencies (SCAG is an RTPA), develop a regional airport capital improvement program. The Regional Airport Capital Improvement Program was completed for the first time in 1993. It contains \$2.2 billion in commercial airport projects and \$3.3 billion in

general aviation projects. Revenue data are not available, but a survey is underway to obtain the information. The \$5.5 billion is not included in the cost estimates of Table 10-1.

Local Sources

In the past few years, revenues generated at the local level has shown the greatest increase of all sources. Since the 1989 plan was adopted, five of the six counties in the SCAG region have adopted half-cent sales tax measures. Local efforts continue to receive support from the Local Transportation Fund, the quarter-cent sales tax collected by the counties. As well, the county transportation commissions are making strident efforts to realize the value of existing holdings and future investments through joint development and mixed-use facilities at transit-related sites.

Although the potential for generating revenues is great, certain distinct flaws in use of sales tax has become evident. Along with most general taxation alternatives, the sales tax is inequitable and fails to equate use of a service with the related costs. Also, as is evident not only in the region, but across the state and nation, this form of taxation is inseparable from the overall state of the economy.

Both the bus and rail networks will contribute to local revenues through farebox returns. It is anticipated that up to \$10.4 billion can be generated by the farebox, assuming the transit operators are allowed to keep fares in line with inflation. This issue has been continuously addressed by the transit community and public policy-makers generally, because of the needs of the transit-dependent. However, given that it is difficult to anticipate any general increase in subsidies, the transit properties must have the latitude to support operations through either fares or other internal revenue sources.

Despite these limitations, local share has become the dominant form of transportation financing. Through the Plan period, it is anticipated that about \$41.6 billion will be generated from local programs.

Although some \$68.9 billion in revenues are forecast, not all this amount will go toward programs identified in this plan. There are several small and large fund categories that are not relevant to the regional network. For instance, a large share of the ISTEA's Surface Transportation Program funds are generally intended to replace the former FAU-FAS funding. After accounting for these other programs, approximately \$57.4 billion is available to finance the Base Plan in the RME.

MARKET INCENTIVES

Uses of various transportation facilities are influenced by financial considerations. For example, a commuter who enjoys free parking at the

job site may tend to shun use of public transportation while a neighbor who has to pay for parking his vehicle might consider taking the bus. Another commuter might be persuaded to rideshare if there was some financial incentive. Towards this end, SCAG has established a Market Incentives Task Force to explore the ways that the market place may be used to influence the demand on transportation facilities.

Another example of a market incentive would be congestion-pricing. For example, use of a facility might be free during off-peak hours while a fee would be charged during peak demand periods. Or, perhaps, a facility might be free for a three-person carpool, a small fee for a two-person carpool, and a larger fee for a single occupant vehicle.

Currently, SCAG has applied for a grant to examine the impact of various fees on the Route 91 toll road between Orange and Riverside Counties. This grant will assess congestion pricing as a market incentive. The project will be incorporated into the Overall Work Program.

For additional information regarding market incentives, please see the discussion in Chapter 3, Regional Transportation Demand Management.

COSTS (EXPENDITURE PROJECTION)

The RME identifies six cost categories, including highways, regional streets and roads, rail capital and operating, bus capital and operating, Transportation Demand Management (TDM) and Non-motorized Transportation. The costs required to provide the levels of service identified in the Base Plan are presented below. (Please note that costs for TDM and Non-motorized Transportation are still in development.)

Highways

Increases identified in the highway network, including High-Occupancy Vehicle (HOV) lanes and all related facilities will cost approximately \$14.9 billion. However, this figure includes the cost of Orange County toll facilities that are not reflected on the revenue side. Excluding those projects, the total cost for the highway program is \$12.2 billion. Also not counted here are costs for maintaining the state and federal highway route network.

The highway component can be further divided into three categories; highway, HOV and a third component that here is called "Highway Blend". This last category includes those projects that include both mixed-flow and HOV lanes. The mixed-flow portion includes \$ 3.1 billion in improvements, HOV is \$4.7 billion, and the highway blend is \$4.5 billion. Each category includes related facility work that is not

always counted in terms of lane miles, such as interchanges, bridge work and ramp improvements.

Regional Streets and Roads

Integration of local arterials into the regional transportation network is supported by specific funding at all levels. In total, some \$700 million in costs are identified. As noted earlier, this figure does not include local maintenance efforts. Also excluded at this time are costs associated with improvements to the Alameda Corridor.⁴

Transit

The transit costs for the study period total \$35.6 billion for both capital and operating. The transit program contains roughly \$12.2 billion in rail capital and \$5.6 billion in associated operating costs. This total combines local, commuter and inter-city rail programs. Bus costs are composed of operating (\$17.3 billion) and related capital costs of \$500 million for bus replacement.

The transit costs assume no change in the aggregate level of bus service; the capital costs identified are for bus replacement only. However, some redeployment is likely. The rail expenses focus on the local services in Los Angeles County -- the Red, Blue and Green lines -- and Metrolink operations throughout the region. The SCAG baseline also includes six candidate urban rail corridors or corridor extensions not currently programmed by the implementing agencies.

It is anticipated that a substantial part of the transit operating deficit (approximately \$1.9 billion over the Plan period) will be met by increased revenues. Revenue alternatives are being developed by the Los Angeles County Metropolitan Transportation Authority. Adoption of a revised financial plan is expected during the Spring, 1994.

Local Programs

As noted earlier, local governments receive a share of federal, state and local funds for their own programs. These programs often have the potential for positively affecting regional transportation trends; for instance, signalization and intersection improvements are done from this mix of funds. However, the facilities involved are not considered to be regionally significant by definition; therefore, this investment is not identified as part of this analysis.

⁴ Local and Regional Streets and Roads operating and maintenance costs will be added to the Plan as they are known. It is expected that the costs will be supported by reasonably available funding sources. The Alameda Corridor Project is estimated to cost about \$1.3 billion (1993 dollars). Revenues to support these costs are being developed and will be added to the Plan when the Corridor Financial Plan is adopted (December, 1993). If the anticipated revenues do not meet the costs, certain projects may not be included in the Plan.

LIFE CYCLE COSTS

Life-cycle costs are taken into account through assuring that Highway operating and maintenance expenses are included. The State of California has enacted legislation which takes maintenance and operations costs "off-the-top" of funds available for state highway projects through the Highway System Operations and Plan Protection (HSOPP) program; these funds are not subject to the North-South split and/or county minimums. Transit bus replacements are scheduled every 12 years per federal guidelines. It is expected that approximately 300 buses will be replaced each year and these costs have been included in Table 10-1. An examination of rail transit replacement and rehabilitation costs, in addition to other bus transit life-cycle costs, is underway to insure that these costs are reflected in the financial tables.

FINANCIAL POLICIES

The 1989 Regional Mobility Element included several policies specifically related to Financial Objectives and Programs. These policies remain generally viable and are listed as follows: (suggested wording changes from the 1989 RME are shown in *italics*:

- Primary reliance should be placed on user based financing approaches to finance transportation projects.
- Increases in the *Federal*, State, and/or local fuel taxes and weight fees, and flexibility in their use, shall be supported to fund implementation of the adopted Plan and its identified programs *and projects*.
- The addition of local transportation taxes (e.g. local sales tax) in all counties should be supported to fund facility expansion, *operating* costs, system and demand-management programs of the adopted Plan.
- Peak period pricing, user fees or other mechanisms should be introduced to reduce peak period traffic demand.
- Value capture approaches to raising revenues (e.g. benefit assessments and development fees) should be used to recoup some of the costs of the capital and operating shortfalls.
- Increasing public funding levels for local streets and road shall be supported in order to reduce backlogged improvements needs with priority given to deteriorated facilities.

STP AND CMAQ PROGRAMMING POLICIES

In 1992, SCAG adopted several policies regarding programming of the federal Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Program (CMAQ) funds:

- Programming of the Surface Transportation Program (STP) funds and Congestion Mitigation funds shall be the primary responsibility of the respective County Transportation Commission, consistent with federal and state law, the Regional Transportation Plan (RTP), and in conformance with the applicable Air Quality Management Plan.
- Implementation of transportation control measures (TCMs) required by the Air Quality Management Plan, including growth and demand management measures, shall be a high priority for expenditure of all STP and CMAQ funds.
- Cities and Counties are eligible to utilize the STP and CMAQ funds for demand management and growth management transportation control measures and will be so advised by the appropriate County Transportation Commission.
- The County Transportation Commissions have the responsibility either directly or through an agreement to document expeditious implementation of the TCMs.
- A local Surface Transportation Program (LSTP) shall be developed and administered established within each County area consistent with state implementing legislation. LSTP projects will be prioritized in each County by the County Transportation Commission consistent with the new ISTEA federal legislation which requires multimodal flexibility. Maintenance and rehabilitation projects which do not increase capacity are exempt from conformity. Following a transition period not to exceed three fiscal years, all LSTP programming decisions must be based on a discretionary process; formula apportionments will no longer be acceptable. Each county area will be apportioned an amount not less than 110% of the FY 1990-91 FAU apportionment for the LSTP program. There will be a 2-3 year period, as needed, to transition from the old FAU program to the new LSTP to all projects currently in the adopted RTIP to continue without interruption.
- County Transportation Improvement Programs shall be submitted to SCAG before County Transportation Commission adoption for review and comment through the AB 1246 process. The Regional TIP will be adopted by SCAG following its

presentation and review by the 1246 Committee. SCAG adoption will include a conformity finding. If SCAG is unable to resolve identified conflicts, SCAG will adopt the components of the program which are possible to adopt and refer back to the respective CTC those projects which present conformity conflicts for reconciliation. In the event that the respective CTC is unable to reconcile the conflict in a timely fashion, recommendations will be made by the 1246 Committee.

ISSUES IN NEED OF FURTHER STUDY

The new federal transportation legislation, ISTEA, requires the Metropolitan Planning Organization (MPO) to demonstrate that revenues are reasonably assured of covering anticipated capital and operating costs of the RMP. In developing the Constrained Alternative, consideration must be given to how the region pays for the capital, maintenance, and operating requirements of the preferred transportation system. At the present time, the Draft Plan does not meet this requirement. This requirement must be addressed and resolved prior to Plan adoption.

In addition to demonstrating adequate financial resources to expand the exiting transportation system to meet demand, the Plan must demonstrate adequate revenues to operate and maintain the existing system. While it appears that adequate revenues are available to operate and maintain the State Highway system, a closer examination must be made of the regional streets and roads system to determine if adequate funds are available to operate and maintain them.

Transit operating and maintenance costs are currently reflected in the financial tables of this Draft Plan. However, a detailed examination of these costs is being made to insure that these costs reflect current assumptions.

In developing the Draft Plan, revenues and costs are illustrated for the entire SCAG region. While some of the revenue and costs estimates can easily be broken into County totals, others were developed at the regional level. Work is underway to identify the revenues and costs of Table 10-1 at the County level. When completed the blank Tables 10-2A through 10-2F will be completed.

TABLE 10-1
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY (a)
1991 - 2010

PROGRAM	COST	%-AGE	REVENUE	NET
Highway Operating	\$6.4	11.8	\$6.3	(\$0.1)
Transit Operating	22.9	42.7	21.0	(1.9)
Regional Streets and Roads	0.7	1.3	1.4	0.7
Transit Capital	12.7	23.7	9.7	(3.0)
Highway Capital	10.6	19.6	9.0	(1.6)
Transportation Demand Management (b)	0.2	0.4	0.7	0.5
Non-motorized Transportation (b)	0.2	0.4	0.4	0.2
TOTAL - ALL PROGRAMS	53.7	100.0	48.5	(5.2)

(A) All dollars are in billions

(b) Estimated

TABLE 10-2A
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
IMPERIAL COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

TABLE 10-2B
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
LOS ANGELES COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

TABLE 10-2C
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
ORANGE COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

TABLE 10-2D
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
RIVERSIDE COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

TABLE 10-2E
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
SAN BERNARDINO COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

TABLE 10-2F
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
VENTURA COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

INTRODUCTION

Goods movement in the SCAG region is a transportation activity with critical linkages to such areas as the economy, mobility, the environment, quality of life, and land use. Formally defined, goods¹ movement refers to the facilities, activities and people involved in transporting commodities, data, raw materials and products for the purpose of consumption, manufacture, or disposal. Public sector and private enterprises participate in goods movement activities as diverse as the movement of oil and water via pipeline; the transport of mail and packages via truck and plane by the United States Postal Service; the import and export of motor vehicles via seaports; the transfer of information via fiber-optic cable; and the shipment of agricultural produce from the Imperial Valley subregion to other SCAG subregions and the nation.

Focus of the Program

The Goods Movement Program was developed in cooperation with representatives of the subregional governments whose members sit, along with the private sector, on various advisory and policy-making boards and committees. At various stages of the development process, other Regional Mobility Element (RME) programs provided comments on goods transportation issues.

**IMPLEMENTATION STATUS OF THE 1989
REGIONAL MOBILITY PLAN**

Much activity in implementing 1989 Plan recommendations has occurred in the system development, regulatory and management arenas. The Plan recommended that the San Pedro Bay port authorities and local governments form a Joint Powers Authority to develop the Consolidated Railroad Corridor. The JPA was created in 1989. Although the Preferred Alternative for the project was certified in January 1993, full funding has not been identified for the project.

The City of Los Angeles pursued the development of a truck management plan that would have restricted truck travel on city arterials during peak periods. It appears that the City has decided not to pursue the final implementation of a peak period management program.

¹ Although freight, goods and cargo are used synonymously, freight also refers to the charge for transporting goods.

Caltrans, the county transportation commissions and the California Highway Patrol (CHP) currently employ various incident management programs. These programs evolved from the Los Angeles Area Freeway Surveillance and Control Project—a demonstration project undertaken on a 42 mile loop formed by the Santa Monica (I-10) Freeway, Harbor (I-110) Freeway, and the San Diego (I-405) Freeway. Another program called Clearing Lanes Efficiently and Rapidly (CLEAR) involves the assignment of specially trained teams of CHP officers and supervisors to selected urban freeway corridors in Los Angeles during peak periods to provide rapid response, verification and removal of incidents.

THE 1993 RME FRAMEWORK FOR GOODS MOVEMENT PLANNING

In recognition of problems and issues that are beyond the scope of the current program, SCAG will complete the Intermodal Goods Movement Study and the Railroad Consolidation Study. The Intermodal Study will provide information on intermodal operations in the SCAG region and their relationship to the economy, congestion, and air quality. The Consolidation Study will investigate the feasibility of consolidating rail freight activities on an east-west corridor in the SCAG region, for the purpose of reducing rail related emissions. These studies will be completed in fiscal years 1995 and 1994, respectively.

PROFILE OF THE GOODS MOVEMENT SYSTEM IN SOUTHERN CALIFORNIA 1990

A major portion of the goods movement system in Southern California consists of fixed-location, publicly-owned infrastructure that accommodates privately-owned and operated freight carriers. Components of the system (Figures 7-1 and 7-2) include all major modes of transport: airports, seaports, highways, freeways, and arterials (public), and railroads (private). The system also includes intermodal transfer facilities, freight yards and truck terminals. Figures 7-3, 7-4 and 7-5 depict truck and rail access to the seaports in the region.

Intermodal System

Various combinations of intermodal operations occur in the region: truck-train; truck-plane; truck-ship, and truck-truck. The amount and quality of information on the intermodal system relative to commodities, weight, values, volumes, operations, and economic markets vary tremendously. The region has always had some degree of intermodal operations. Innovations in the shipping industry (e.g., containerized cargo), however, have greatly increased intermodal operations. The

Intermodal Goods Movement Study, which will be completed in February 1995, will provide information on intermodal operations in the SCAG region.

Goods Transportation and Ground Access

The regional transportation system of interstates, state highways and designated truck routes provide ground access to local, subregional and/or inter-regional markets. The ground transportation system also supports access to the major air carrier airports, seaports, intermodal facilities and military airfields.

National Highway System (NHS). Under the ISTEA, the NHS when approved by Congress in September 1995, will consist of the interstates and other strategic highways, which provide motor vehicle access between these facilities and major port, airport, public transportation facility, or other intermodal transportation facility (see Figure 5-6 in Chapter 5).

The NHS largely replaces the federal-aid funding classification system. The federal government will maintain an interest in NHS facilities for the purpose of funding, operations, and maintenance.

LOS ANGELES CO.

SAN BERNARDINO CO.



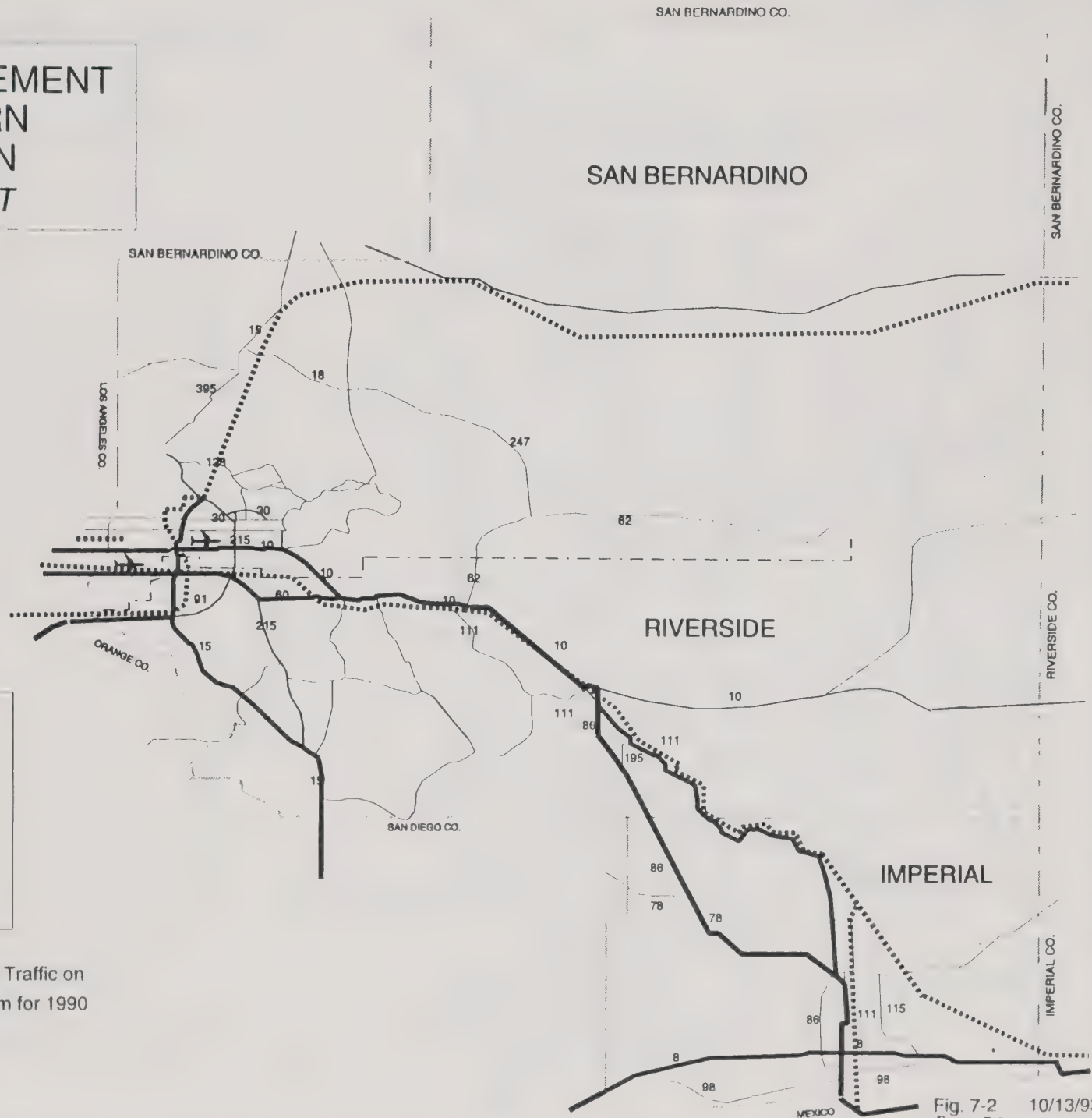
RIVERSIDE CO.

SAN DIEGO CO

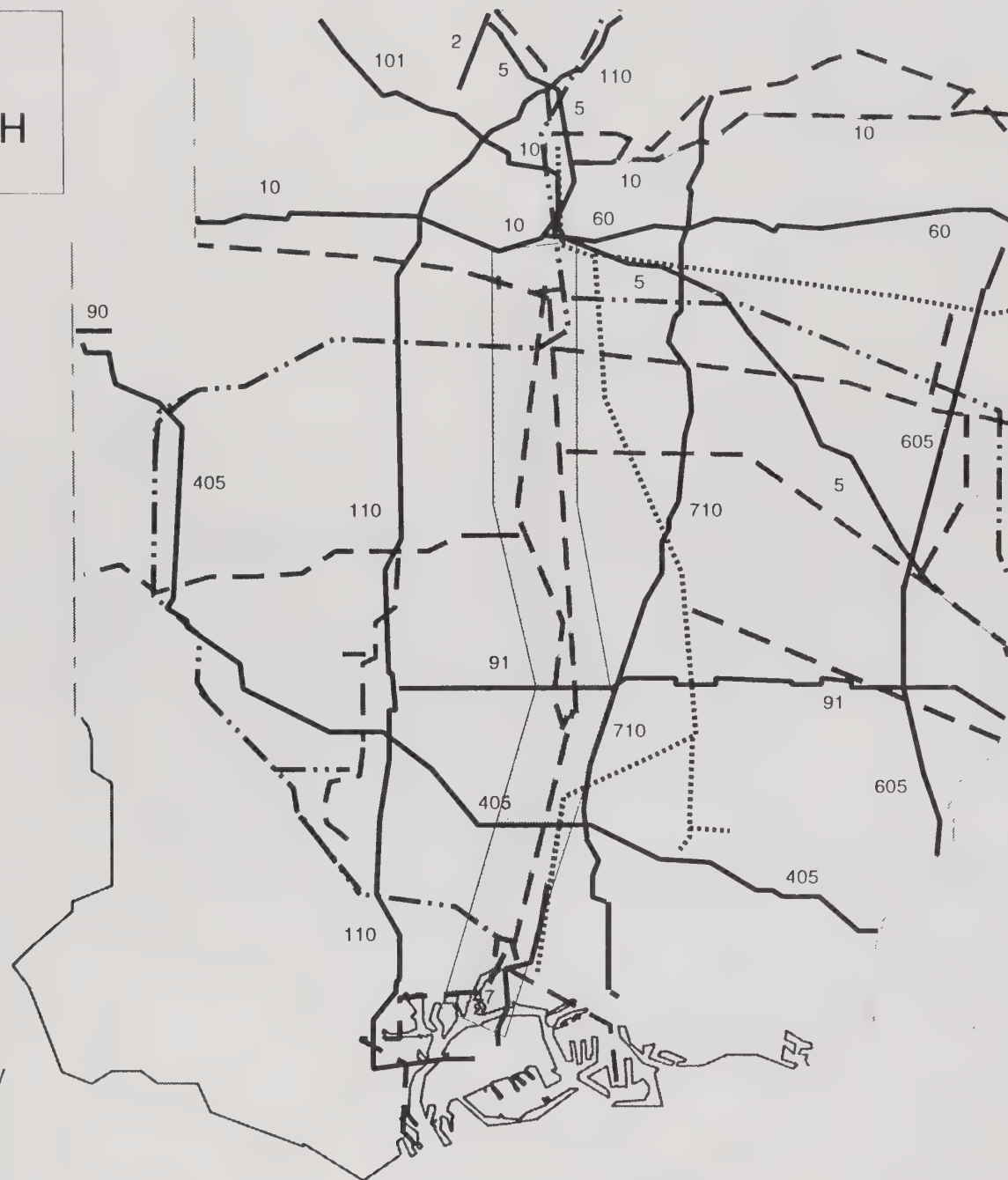
1990 GOODS MOVEMENT IN THE EASTERN SCAG REGION 1993 RME DRAFT



SOURCE: CALTRANS Annual Average Truck Traffic on the California State Highway System for 1990



1990 EXISTING RAIL
PORT ACCESS FOR
LOS ANGELES/LONG BEACH
1993 RME DRAFT

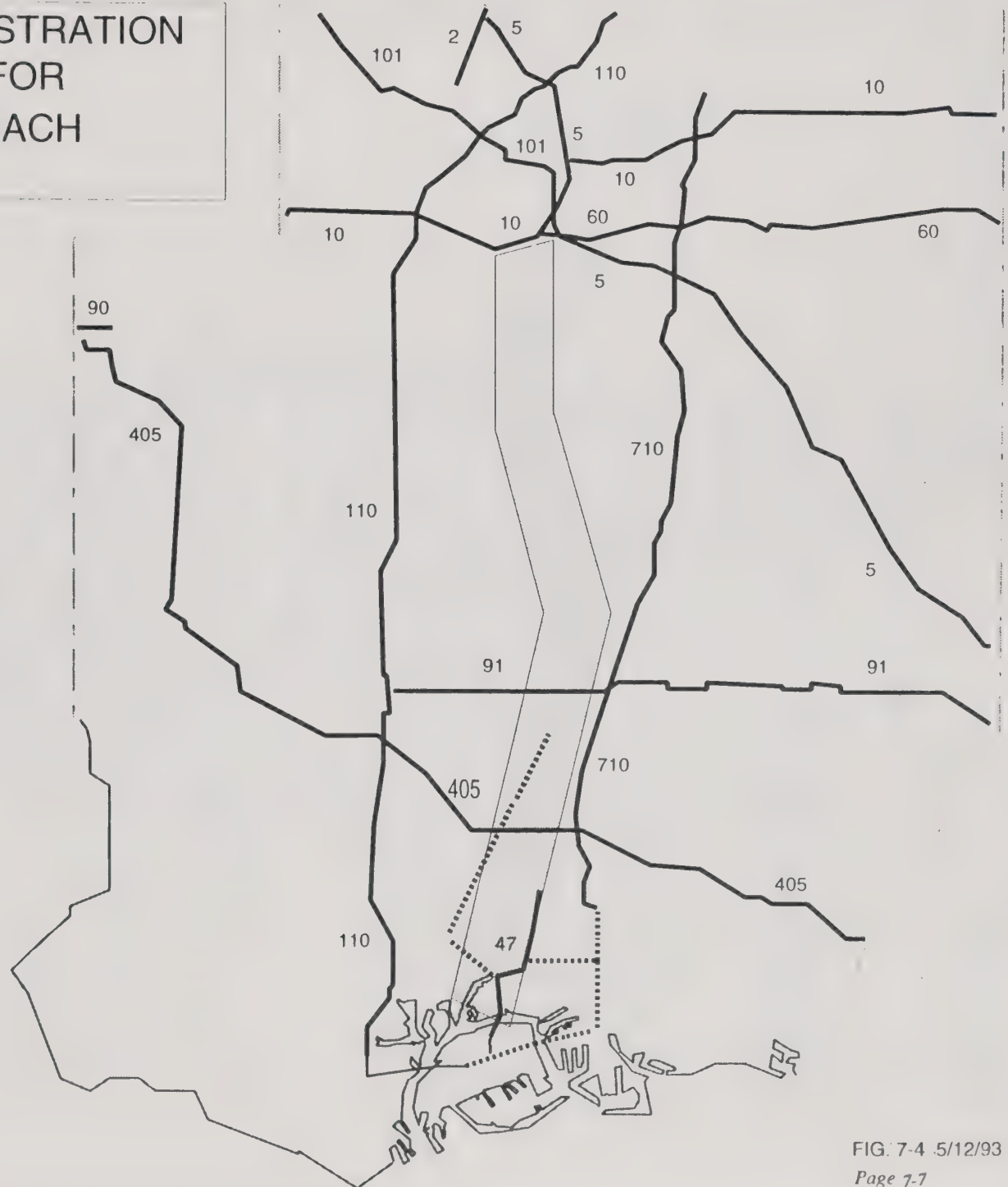


LEGEND

- Southern Pacific
- . . . Santa Fe
- Union Pacific
- ▬ Alameda Corridor

Source: Southern California Regional Rail Authority

1990 EXISTING AND DEMONSTRATION TRUCK PORT ACCESS FOR LOS ANGELES/LONG BEACH 1993 RME DRAFT



LEGEND

..... Demonstration Project

Alameda Corridor

Existing Freeway

Source: CALTRANS
Port of Los Angeles
Port of Long Beach

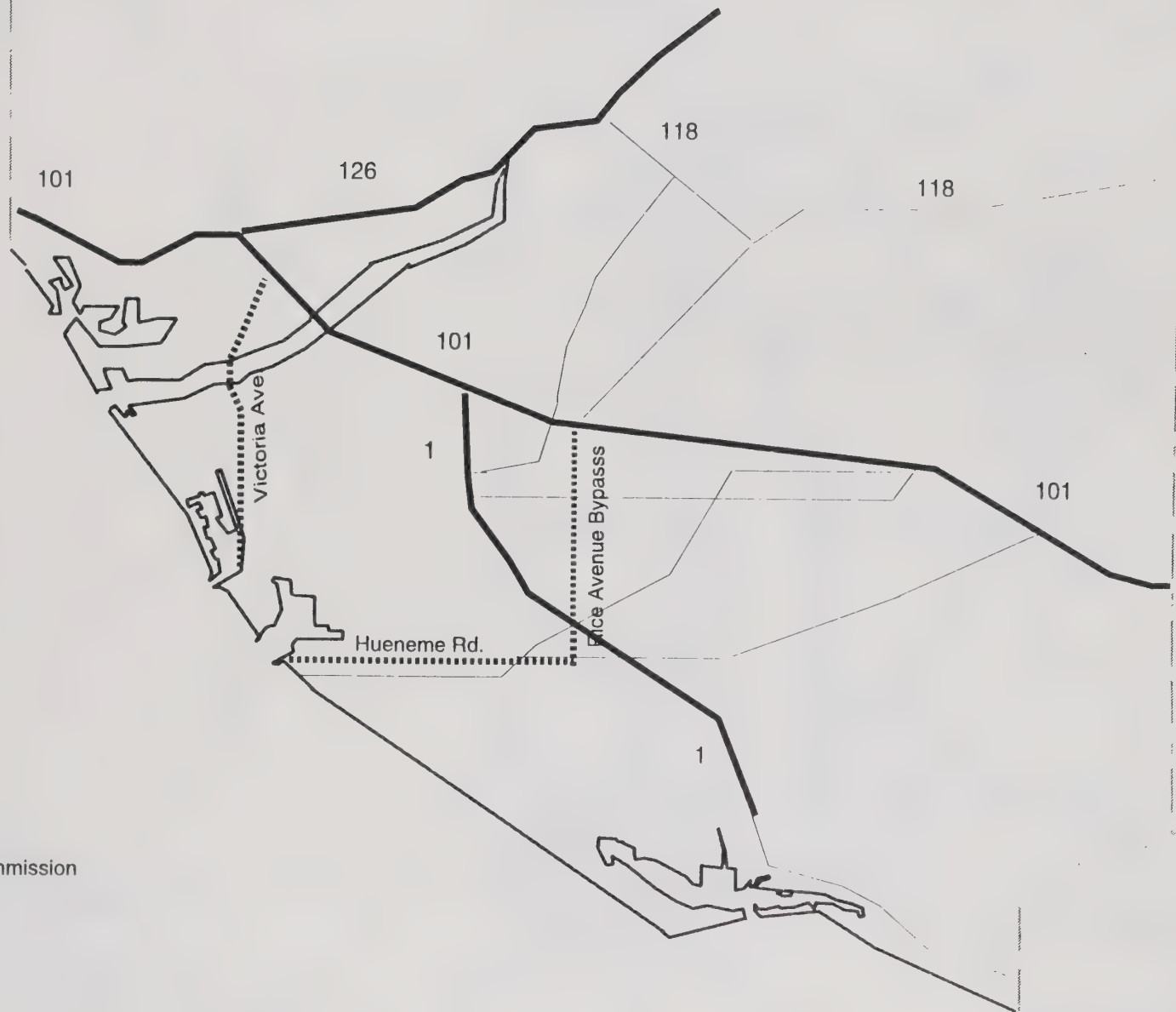


scag
SOUTHERN CALIFORNIA
ASSOCIATION OF GOVERNMENTS

FIG. 7-4 5/12/93

Page 7-7

1990 ACCESS FOR PORT HUENEME 1993 RME DRAFT



LEGEND

- Existing Freeway
- Proposed Project

Source: Ventura County Transportation Commission

Institutional Influences On Goods Movement In Southern California

Table 7-1 provides a partial listing of the influence of various levels of governmental agencies on goods movement. Other governmental divisions such as the departments of Agriculture and of Fish and Game, though not shown, have requirements to which movers of these goods have to comply.

The five major air carrier airports (Los Angeles International, Glendale-Burbank-Pasadena, Ontario International, John Wayne/Orange County and Long Beach) and seaports (Los Angeles, Long Beach and Port Hueneme) operate as autonomous agencies within their respective local governments, and have jurisdiction over the various passenger and cargo carriers that operate therein. Policy-making authority is vested in airport and port commissions appointed by their respective municipal governments. The private users of the goods movement system function as independent operators and through representation in industry organizations such as the American Trucking Association, California Trucking Association, American Association of Railroads and the Steamship Association of California.

Goods Movement Markets

Several market service areas and mode relationships are discernable depending on the geographic market area. This analysis deals with goods movement markets within the SCAG region, and between the SCAG region and the rest of the world. Local and subregional markets are those within the SCAG region. Inter-regional goods movement occurs between the SCAG region and the regions of the continental United States. Goods movement between the SCAG region and other countries defines the international markets. Goods movement between the SCAG region and the U.S. regions that are not on the continent are also included under international markets.

TABLE 7-1
A SELECTED LISTING OF GOVERNMENT AGENCIES AND
THEIR INFLUENCE ON GOODS MOVEMENT
IN THE SCAG REGION

Level	Agency	Influence/Regulation	Mode Influenced
Federal	Department of Transportation	Transportation Policies and Funding	All modes
	Federal Aviation Administration	Safety and operational	Airlines
	Federal Railroad Administration	Safety and operational	Railroads
	Environmental Protection Agency	Emissions--air and water quality	All modes
	Federal Maritime Commission	Licensing, rates	Ocean common carriers
	US Customs	Inspections, duty and fee collection	All modes
	US Coast Guard	Licensing, Safety & Operational	Maritime operations
	Federal Highway Administration	Funding and Operational	Highways and Trucking
	Interstate Commerce Commission	Licensing and operational	Railroads and Trucking
State	Department of Transportation, Division of Aeronautics	Funding, operational, Safety, System Planning, Monitoring, Capital Improvements	Roads and trucking
	California Highway Patrol	Safety	Trucking
	Energy Commission		
	Air Resources Board	Air quality	All modes
	Department of Motor Vehicles	Vehicle registration, driver licensing	Trucking
	Public Utilities Commission	Safety and operational	Railroad, Trucking
Regional and Local	CALTRANS Districts 7, 8, 11, 12	Funding, operational	Roads and trucking
	Air Quality Management Districts (1) and Air Pollution Control Districts (3)	Air quality	All modes
	Local Governments	Operational, funding	All modes

Mode-Market Relationships

Table 7-2 and Figure 7-6 show the markets served by the various modes. Heavy-duty trucks generally serve all markets, including the contiguous international markets of Mexico and Canada. Planes and airports serve national and international markets. The three major railroads operating in the region (Atchison, Topeka and Santa Fe; Southern Pacific; and Union Pacific) primarily serve interstate transportation needs, but a significant amount of traffic exists among Mexico, Canada and Southern California.

TABLE 7-2
MARKETS SERVED BY DIFFERENT MODES

Markets	Mode			
	Rail	Land	Water	Air
Local	-	Trucks	-	-
Intra (Sub)-regional	-	Trucks	-	-
Inter-regional: regions within the continental US	Freight Trains [§]	Trucks	-	Airlines and package express (UPS, Federal Express, etc.)
Regions outside the continental US--primarily international	Freight trains	Trucks	Tankers, bulk carriers, container carriers and general carriers	Airlines and package express.

§ Barring exceptions, freight trains haul goods from the SCAG region to regions only outside California.

MARKETS SERVED BY DIFFERENT MODES

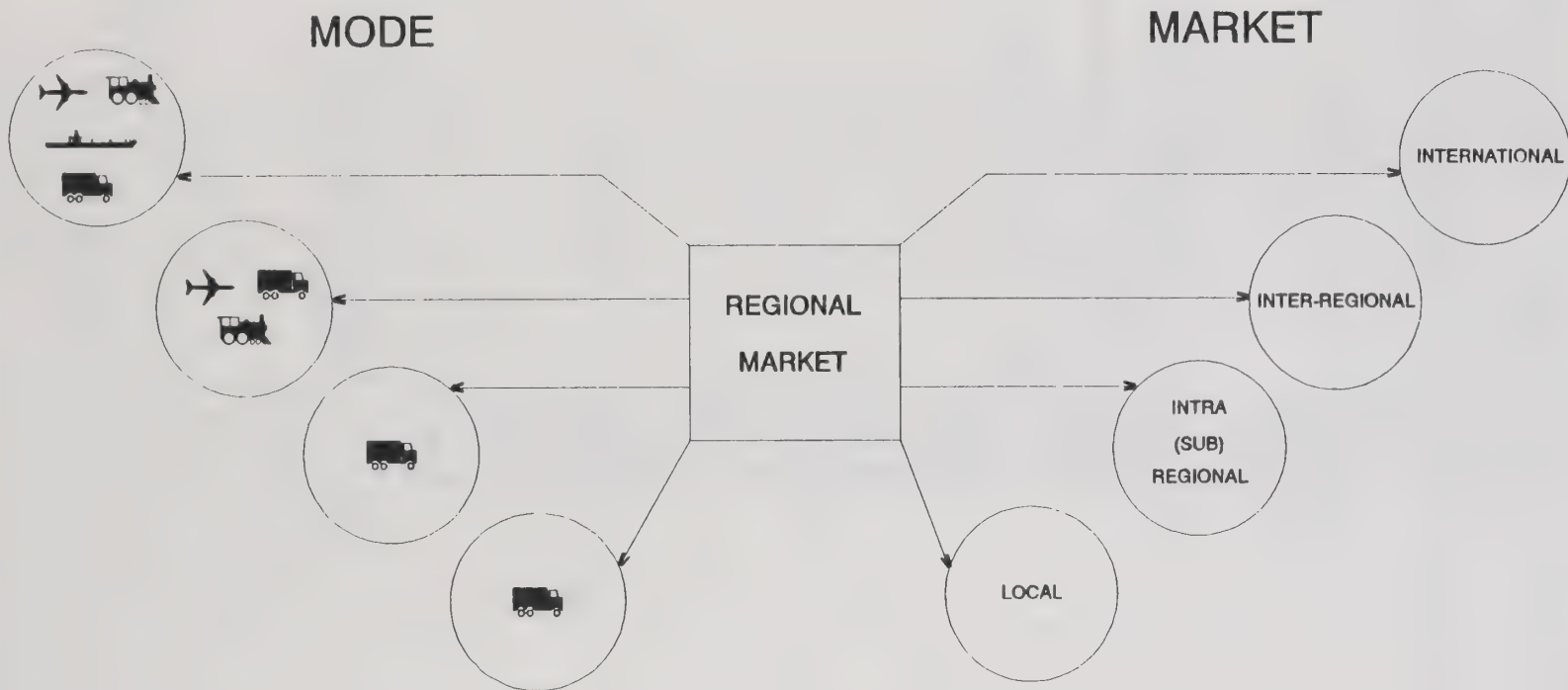


FIGURE 7-6

ISSUES AND IMPACTS ASSOCIATED WITH GOODS TRANSPORTATION

Issues

While the region's only mobility goal associated with energy is to reduce its consumption, energy choices and decisions influence all aspects of the region, notably: transportation system development, mode choice, business growth, competitiveness and location, environmental and community quality, and relationship of the SCAG region to trade partners and competing areas of the country and world (*see* Figure 7-7).

Increased government regulation has created the perception that the region is not business-friendly and business/regional economic competitiveness cannot be achieved/maintained.

Few resources are allocated to planning and programming for goods movement activities.

Land-use design and infrastructure development do not adequately accommodate the needs of goods movement.

Impacts

- Accidents and incidents on the region's affected roadways.
- Mode and system inefficiencies and conflicts.
- Environmental damage: The various air basins in the region are designated as non-attainment areas for various pollutants.

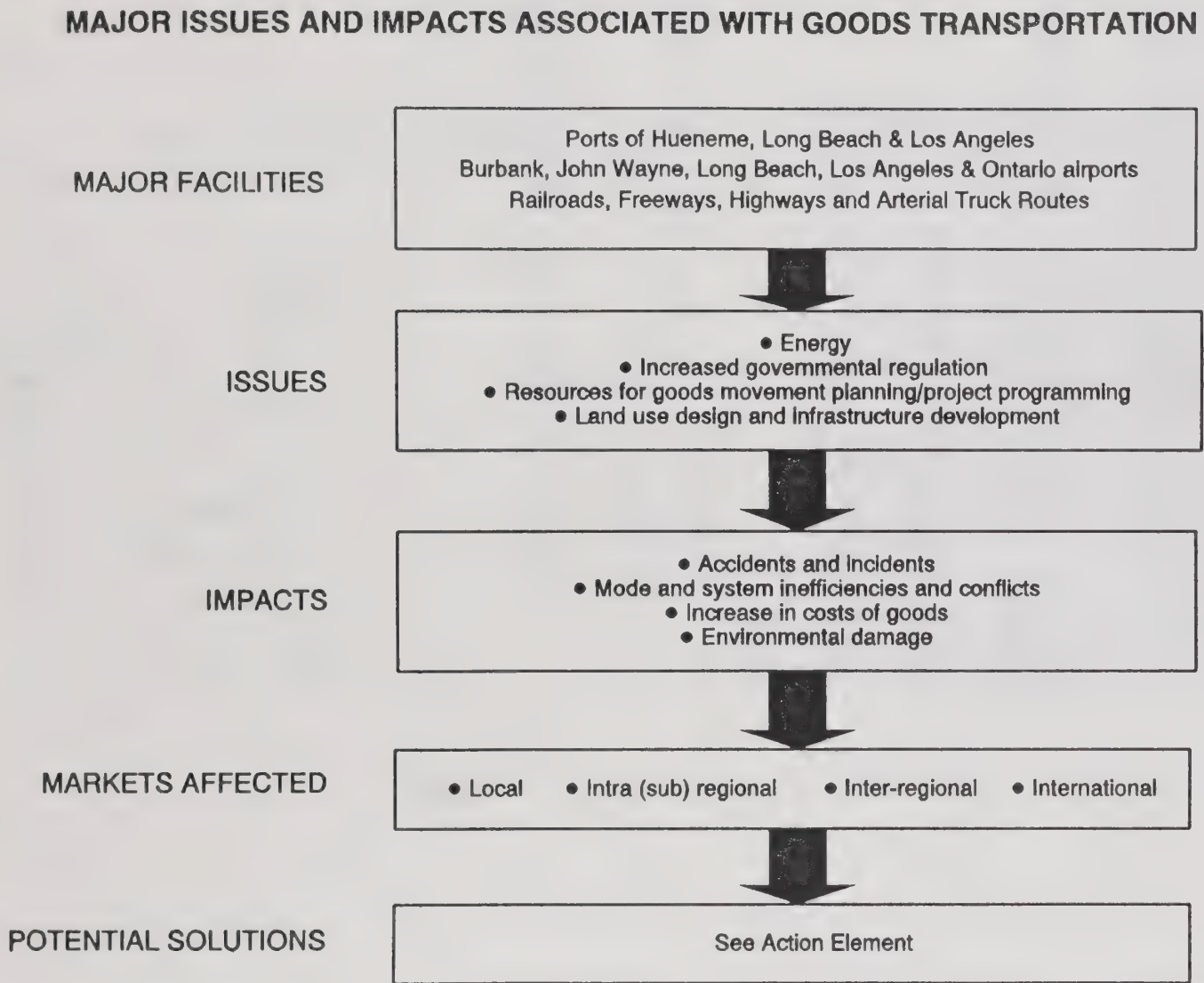


FIGURE 7-7

POLICIES

Transportation System Development, Use, Management and Safety

- Growth in the demand for goods movement will be accommodated through the provision of adequate multi-modal and intermodal infrastructure that is consistent with overall regional goals, objectives, and policies.
- Pricing strategies should be considered as one of the strategies to reduce peak period congestion.
- The feasibility of air cargo transport at all major air carrier airports in the region will be considered as a means to address growth in cargo volumes.
- Demand for increased goods movement will be given consideration in corridors where system connectivity and gap closures projects are being planned.
- The development and use of pipelines within suitable utility corridors or public rights-of-way will be encouraged.
- The siting, routing, and construction of pipelines will be conducted so as to avoid disruptions of sensitive environments, to improve the safety and reliability of the system and to protect ground water quality.
- The inter-regional and intra-regional transport of crude oil by modes which lower the risk of spills, reduce air pollution emissions and lessen consequences of spills will be encouraged.

Regional Economy, Mode Efficiency and Competitiveness

- The ports and major air carrier airports in the SCAG region are regionally significant and important trade links with the remainder of the world, and shall be supported as a major foundation of the regional economy.
- Arterial truck access routes will be coordinated for the purpose of improving system connectivity, eliminating circuitous routings and reducing delays.
- The potential for adverse impacts to mode shares and diversion of business to other ports will be considered in the development and implementation of local and regional plans.

Land Use

- Planning to accommodate multi-modal and inter-modal goods movement shall be an integral part of the land use and circulation elements of local government general plans and specific plans.
- Local governments shall consider requiring off-street dock facilities for all new buildings, and existing buildings that are approved for extensive renovation, sufficient to accommodate the shipping and receiving needs of such buildings.

SUBREGIONAL INPUT

As a part of the bottom-up planning process, subregional input provides information and recommendations regarding significant issues of concern on the parts of local jurisdictions. Table 7-3 depicts subregional input as related to the Goods Movement program.

TABLE 7-3
SUBREGIONALLY RECOMMENDED IMPLEMENTATION PROGRAM

Subregion	Issue	Recommendation
Imperial County Association of Governments	● FHWA and Caltrans are looking into the development of a State Truck Inspection Facility for vehicle weighing and agricultural products control.	<ul style="list-style-type: none"> ● Recognize the new Calexico East Port of Entry and the need for a SR-7 connection to I-8. ● Recognize the economic implications of the new Port of Entry. ● Support federal funding to expedite solutions to transportation problems in the vicinity of the new Port of Entry, namely the widening of SR-98 and the extension of SR-7 to I-8. ● Continue to be sensitive to Imperial County's unique planning considerations in the development of regional plans. ● Work with Caltrans, IVAG and Imperial County to provide a more detailed county transportation plan which highlights the future regional transportation projects.
Arroyo Verdugo	● The Burbank-Glendale-Pasadena Airport provides for the movement of goods and passengers in the subregion.	<ul style="list-style-type: none"> ● Goals & Objectives: Provide for the efficient movement of freight. ● Policies: Provide a transportation system that ensures the safe and efficient movement of people and goods.
Western Riverside Council of Governments	N/A	<ul style="list-style-type: none"> ● Goal: Develop a safe, affordable and efficient transportation system which provides access for the movement of goods, people and information to communities, employment centers, education, shopping, recreation and other important services. ● Goal: Support completion of an adequate roadway system which provides for the safe and efficient movement of people and goods in rural and developing areas.
San Bernardino Associated Governments	N/A	N/A

Subregion	Issue	Recommendation
<p>Southeast Los Angeles County Subregion</p>	<ul style="list-style-type: none"> •The essence of the SELAC Core Strategy is to focus public and private sector energies on restoring a healthy and prospering economy by expanding the most promising clusters of existing economic activity in the SELAC area: world trade, goods movement and certain manufacturing sectors. •SELAC is well positioned to play a key role in the region because of its pivotal location and critical connections to ports, rail lines and the freeway network. Of key significance is the fact that the region's goods movement system focuses on SELAC and adjacent South Bay: In particular, the Ports of Long Beach and Los Angeles, the Hobart Rail Freight Yards and the planned development of the interconnecting Alameda Corridor. 	<ul style="list-style-type: none"> •A high priority should be given to planning and funding port facilities, Alameda Corridor improvements, truck routes, grade separations and other facilities which will expand the goods movement capacity of the Subregion and link it to nearby industrial areas slated for revitalization. •Pursue additional funding for goods movement planning and implementation of capital improvements on a Subregional basis, particularly for facilities that have regional significance. •Work with MTA and Caltrans to provide truck lanes or routes on or adjacent to freeways in order to reduce truck traffic congestion on the existing transportation system, emphasizing peak period relief and ways of avoiding disruption of local streets. •Give priority to truck lane improvements on the I-710 Freeway. •Identify methods of improving access for cities in proximity to the goods movement corridors and tie in with economic development activities to capitalize on convenient goods movement.
<p>South Bay Cities Association</p>	<ul style="list-style-type: none"> •The Alameda Corridor and supporting transportation facilities should be treated as a top priority for funding and implementation support in the RME and the RTIP. •LAX and the Los Angeles Harbor, including bus transit and goods movement facilities, should be treated as top priorities in the RME and the RTIP, with active Subregional involvement in shaping the plans for their operational expansion. 	<ul style="list-style-type: none"> •Truck routing coordination should receive a high priority to insure that goods movement and other traffic are most cost effectively accommodated on the Region's transportation system. •Manage the movement of goods and services, especially truck traffic; its impact on congestion and the health of the Subregional and Regional economies is critical. •Identify projects of Regional importance (e.g. airports and harbors) and ensure that their expansion/construction and associated impacts are prioritized and sufficiently funded at the Regional level.
<p>Orange County</p>	N/A	N/A
<p>North Los Angeles County Subregion</p>	N/A	<ul style="list-style-type: none"> •The need for efficient movement of people and goods within the Subregion should be considered.
<p>Coachella Valley Association of Governments</p>	N/A	N/A
<p>City of Los Angeles</p>	<ul style="list-style-type: none"> •The City of Los Angeles is working with other jurisdictions on the Consolidated Alameda Corridor Transportation Plan. The purpose of the plan is to facilitate access to the Ports of Los Angeles and Long Beach through the year 2020 by consolidating rail movements into a single corridor between the Los Angeles Harbor and East Los Angeles Yard/Pasadena Junction, where goods can be distributed nation-wide. 	<ul style="list-style-type: none"> •Freight transportation systems should be designed in a way to make them adaptable to changes in need of the service and industrial sectors. •Smaller trucks with good loading/unloading systems can provide better service, have less of an impact on street and highway capacity, and create less damage and congestion in cases of accidents than the 18-wheelers.
<p>Ventura Council of Governments</p>	<ul style="list-style-type: none"> •Ventura County has given great attention to goods movement, especially as it relates to improved port access at Port Hueneme. 	N/A

The efficiency of freight transportation via truck will be enhanced through improvements in the operating conditions on the region's regional streets and roads. As a part of the Regional Streets and Highways Program (Chapter 5), expansion of mixed-flow and HOV³ capacity and improved system management is recommended; arterial HOV facilities, Smart Corridors and application of advance technologies are endorsed for study and possible implementation where appropriate.

Relationship of Goods Movement Strategies to Congestion Management Programs

State statutes that authorized the creation of Congestion Management Programs (CMP) do not require that CMPs address goods movement activities and non-recurrent congestion. Thus, the adopted CMPs do not address issues directly related to goods movement. However, elements of the CMP do have potential for benefiting goods transportation insofar as the Capital Improvement Programs (CIP), Land Use Elements, TDM and Transit elements may lead to improved operation and management of the system for both people and goods. The CIPs are Congestion Management Agency input into the Regional Transportation Improvement Program for the SCAG region. The adopted CMPs were found to be consistent with the 1989 RMP and their respective CIPs were integrated into the Action Element of the RME (See Chapter 12, Preliminary Regional Action Plan).

ISSUES IN NEED OF FURTHER STUDY

Industrial development. Adequate funding to develop, operate and maintain the region's significant existing and proposed freight movement facilities could be key in revitalizing the region's economy and achieving long-term stability. Completion of the Alameda Corridor, for example, could form a core objective that solidifies the region's actions to help create jobs, to maintain trade links and to enhance the competitiveness of the region and the state. Other regionally significant major infrastructure as identified in the RME, would also be key in considering the economic stability and policy development for the region.

Energy. While the region's only mobility goal relative to energy is to reduce its consumption, decisions concerning energy help shape the region's economic base, transportation, land use development patterns, recreation, quality of life and the environment. In the absence of major energy crises, the risk that the region faces is not apparent. The type of energy consumed by residents, mobile sources and industry, however, will continue to determine the fundamental challenges that confront the region. Subregional decision-makers may want to focus on additional

³ Excludes heavy duty-vehicles.

Subregion	Issue	Recommendation
San Gabriel Valley	<ul style="list-style-type: none"> •The 10 and 60 freeways carry significant truck traffic. The industrial uses along the 60 encourage peak period congestion due to fixed work hours. 	<ul style="list-style-type: none"> •Policy: Support the development of a network of subregional principal transportation facilities which ensure the safe and efficient movement of people and goods to accommodate inter and intra-regional and subregional travel demand. •Policy: Minimize the regional and subregional truck traffic impacts.
Westside Summit Cities	<ul style="list-style-type: none"> •Goods movement is a major economic issue in the subregion. It is also a traffic circulation issue because of the high volume of pass-through truck traffic that the Westside experiences, due to its location in the middle of a highly urbanized county. •One of the major issues facing planning for goods movement is the lack of a regional or subregional database. More research will be needed on this issue to develop a coherent regional policy. 	<ul style="list-style-type: none"> •The general plan circulation elements of the Westside Summit cities include a mixture of priorities and policies both in support of efficient goods movement, as well as in support of appropriate mitigation measures for truck traffic. •Several cities do not have official truck route systems and have stated that a priority is to implement truck routes or restrictions in their cities. •The Westside Cities Subregion proposes to evaluate whether a unified truck route/restriction system is needed.

CONSTRAINED PROJECT ALTERNATIVE

Goods Transportation Site-Specific Recommendations

Site-specific and ground access improvements in the vicinity of the seaports and major air carrier airports in the region are recommended. Improvements are detailed in Chapter 12 - Preliminary Regional Action Program. The single largest facility and operations improvement identified is construction of the Alameda Corridor. Completion of the Alameda Corridor project is "the most important single transportation improvement project in the State; it has statewide and national significance; and the consequences of inadequate funding to implement the project would have disastrous economic consequences."²

Feasibility Studies. Several feasibility studies which address specific problems associated with goods transportation are recommended, including evaluating the congestion and air quality impacts of queued traffic at railroad crossings in the region; studying the economic feasibility of the phased elimination of at-grade railroad crossings of high traffic flow arterials; and conducting a study to examine the feasibility of pricing to reduce accidents, incidents and associated congestion on the freeways. It is also recommended that the feasibility of high-speed freight transportation be ascertained and that this issue be addressed in future studies of high-speed rail passenger service.

² Source: SELAC Subregional input to Regional Comprehensive Plan: Excerpts of speech by Mr. Daniel Wm. Fessler, President, California Public Utilities Commission; Member, California Transportation Commission, speaking at the TRANSCON 2000 International Conference: Future Transportation Technology, Palm Springs, California, October 25, 1993.

aspects of energy and how decisions and choices regarding energy can help achieve subregional goals and objectives.

Key issues involving energy and goods movement include:

- Fuel types and achieving air quality.
- Reducing dependence on fossil fuels for transportation and developing alternative fuel sources.
- Mitigating the direct adverse impacts of the energy decisions on jobs directly related to goods movement.
- Mitigating the indirect impacts of goods movement-related energy decisions on jobs, industry, business and residents.
- Reducing the impacts of current fuel sources for goods movement.

Public-private sector improvement initiatives. The relationship between the public and private sectors in Southern California is strained. The public sector could provide leadership in improving communication between the two and in considering strategies to address outstanding issues such as the following [The Intermodal Surface Transportation Efficiency Act (ISTEA) approach encourages partnerships between the public and private sectors in resolving critical issues]:

- Developing and funding important infrastructure such as the Alameda Corridor.
- Integrating goals for the region's energy and goods movement future into the framework for planning for the economy, transportation, the environment, land use, and quality of life.
- Establishing a national and state legislative agenda that promotes regional goals in the area of energy, goods movement, transportation, technology and the environment.
- Maintaining a competitive regional economy and strengthening links to global trade and domestic markets.
- Integrating advanced technologies and technology transfers that facilitate the intermodal transportation system.

Safety. Reduction in delay and congestion associated with vehicular accidents can improve mobility. Studies should be undertaken to determine ways to improve safety on the system.

INTRODUCTION/BACKGROUND

The SCAG region includes 56 public-use airports, which makes it the largest airport system of any region in the world (*see* Figure 8-1). The breakdown of these airports includes 44 general aviation (GA) airports, 10 commercial service airports, one closed military airbase for which civilian reuse has not been determined, and one military/civilian joint-use airport. The five urban airports that serve most of the region's aviation demand are Los Angeles International (LAX), Ontario International (ONT), John Wayne/Orange County (SNA), Burbank-Glendale-Pasadena (BUR), and Long Beach (LGB). *Palm Springs (PSP) serves urban areas in the low desert east of the Los Angeles basin. Palmdale (PMD) serves the Antelope Valley, and may relieve airports in the Los Angeles basin in the future if high-speed access can be provided.*¹

While the SCAG region is first in aviation activity compared to any other region, it has been beset by a number of problems. Foremost among them has been an expected shortfall in commercial airport capacity for both air passengers and air cargo. Further discussion of air cargo in the broader context of goods movement is presented in Chapter 7. This shortfall may be offset with the possible closure of two additional military air bases in the region.

Commercial airport ground access is another major concern. As airports reach their physical capacity, access infrastructure for passengers and cargo will become increasingly congested, so the need for inter-modal and multi-modal access strategies will increase.

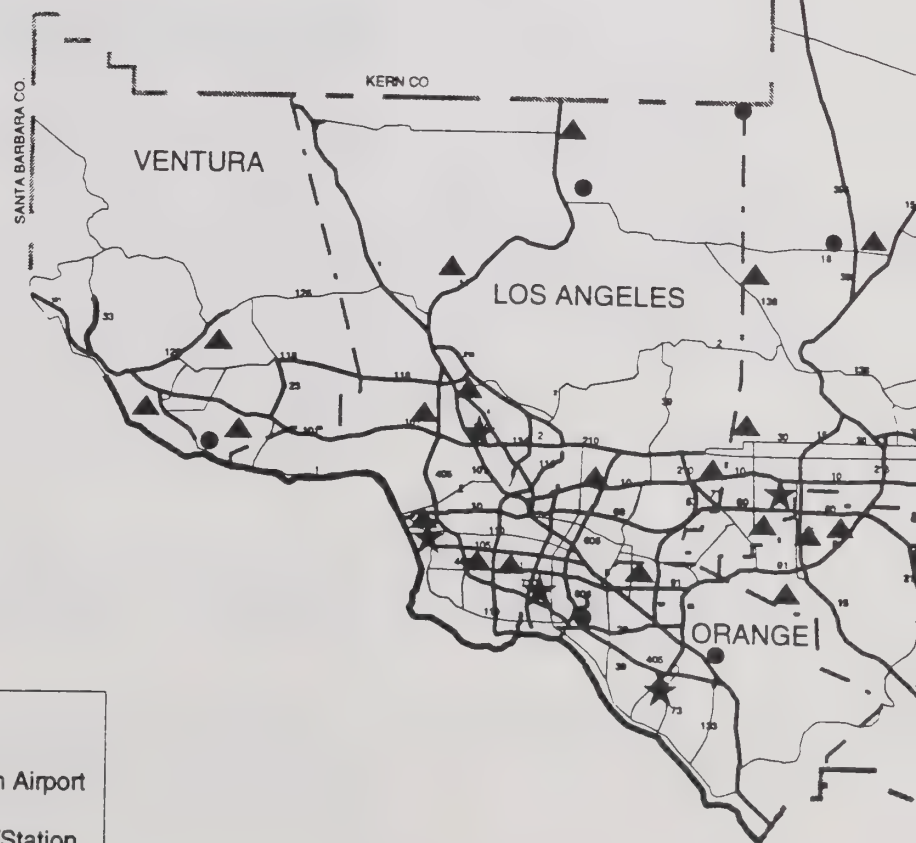
The general aviation system is under increasing budgetary pressures as local governments experience the effects of recession. This is occurring during a period when the roles of general aviation airports are changing from recreational uses to more support for business and government use, and for emergency response to natural disasters and civil unrest.

Another major concern is the strategic role of the aviation system in contributing to the economic recovery of the region and future economic development, particularly in relation to international trade.

During the past year, this chapter has been reviewed by SCAG's Aviation Technical Advisory Committee (ATAC) and by the Transportation and Communications Committee (TCC).

¹. Italicized narrative represents responses to comments on the July 1993 RME Discussion Document from the County of Orange, the City of Los Angeles, Department of Airports, the City of Palm Springs Regional Airport, and the City of Simi Valley.

1993 REGIONAL AIRPORT SYSTEM 1993 RME DRAFT

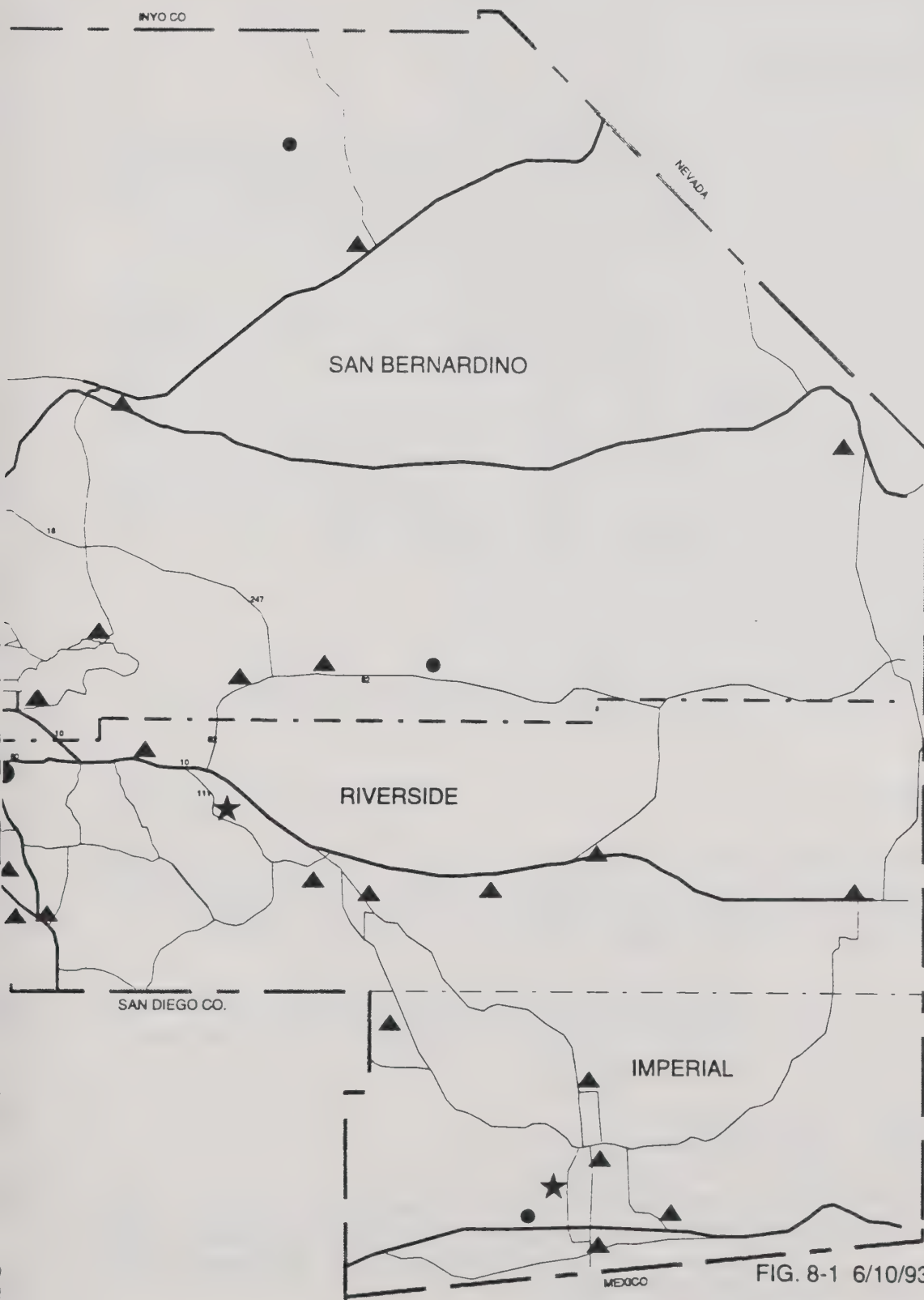


LEGEND

- ▲ General Aviation Airport
- Military Airbase/Station
- ★ Air Carrier Airport

Note: George AFB closed. Reuse is pending
Source: 1992 Aeronautical Sectional Chart





COMMERCIAL AIRPORT CAPACITY

INTRODUCTION/BACKGROUND

In 1988, commercial airports of the Los Angeles basin served 57.9 million annual passengers (MAP), roughly 13 percent of the total air traffic in the United States. By 1991 the same airports served 61.8 MAP. Currently, policy constraints limit the commercial airport system to serving fewer passengers than its physical capacity would allow.

Some immediate capacity relief may be provided by existing outlying airports. Palm Springs Regional Airport, for example, is a commercial airport that serves 430,000 passengers annually and has recently added runway capacity. Palmdale Plant 42 has authority for 400 commercial flights per day under a joint-use agreement with the Air Force, and may in the future provide relief for commercial airports in the Los Angeles basin. However, even with relief from these outlying airports, several commercial airports in the Los Angeles basin are expected to surpass constrained passenger levels during the next decade. LAX, it should be noted, went beyond its policy constraint in 1987.

RECOMMENDED GOAL

- Enhance airport system capacity to accommodate increased air passenger demand.

RECOMMENDED OBJECTIVES

- In the 1995 Regional Aviation System Study, identify multiple, short-term and long-term aviation-related strategies that are needed to solve/mitigate the capacity and congestion issues at existing airports.
- In the 1995 Regional Aviation System Study, identify non-aviation strategies to address capacity and congestion issues at existing airports.

ASSESSMENT OF NEEDS AND DEFICIENCIES

Demand pressure on the region's five metropolitan commercial airports is expected to increase dramatically during the next two decades. They are projected to serve 118 MAP by the year 2010, which represents a 91 percent increase over 1991 levels.

The adequacy of its commercial airport capacity is of great concern to the region, particularly in terms of reaching the Regional Mobility Element (RME) strategic goal of enhanced regional mobility for inter-regional travel. *While there have been infrastructure improvements at LAX and John Wayne Airport during the past 10-15 years and other improvements are planned for Burbank and Ontario, the existing airports will still experience a capacity shortfall.*

Efforts to locate new airport sites have been unsuccessful, as documented in the 1980 Aviation System Study and the 1991 Aviation System Study Update. *Remote sites are available, but must demonstrate that they have sufficient demand, carrier support, funding support, and technical feasibility.* Capacity shortfall for air cargo was documented in SCAG's Air Cargo Assessment as were options for increasing cargo capacity. Consequently, current efforts are focused on better utilization of existing airports in SCAG's Commercial Airport System Capacity Study. Another effort, the Military Airbase Contingency Study, is examining the civilian utility of ~~remaining~~ military air bases ~~in case they are~~ that are scheduled to be closed by the Department of Defense. *The bases should be evaluated as to the feasibility and desirability of upgrading them to commercial facilities. A later study should assess the costs and benefits of such an upgrade. The current study includes George Air Force Base (AFB), Norton AFB, and Marine Corps Air Station (MCAS) El Toro which have been or will be closed, and March AFB, which is scheduled for realignment and downsizing. Another study, to be completed in 1994, will examine the potential for joint-use at Naval Air Weapons Station (NAWS) Point Mugu.*

RECOMMENDED POLICIES

- Support the more efficient use of commercial airport facilities to serve growing air passenger demand in the region. Airport-generated noise, air quality and ground access impacts resulting from increasing air service should be mitigated.
- Each subregion should provide environmentally acceptable capacity within its own market area to meet local, short-haul air passenger demand *due to shorter access time of short-haul passengers.*
- Add the former Norton Air Force Base, now San Bernardino International Airport, to the SCAG regional system of civilian airports and forward that information to the FAA's National Plan of Integrated Airport Systems (NPIAS).
- For those military airbases, which are, or will be closed by the Department of Defense, support conversion to commercial air service if such bases have been determined to have a high

technical and market potential for use as commercial airports. This policy most strongly applies to those subregions which cannot otherwise provide sufficient, environmentally acceptable capacity to meet their own local, short-haul air passenger demand.

- *Examine the feasibility of commercial air passenger service at remaining active duty air bases if invited to do so by the military.*
- *Support outlying airports, such as Palm Springs, George AFB and Palmdale to serve their own market area. Also, examine high-speed access systems to attract passengers from the metropolitan areas of the Los Angeles basin.*
- Support continued examination of new technologies and their potential impact on the aviation system, and its inter-modal connection to the rest of the Metropolitan Transportation System (MTS). *This would include locational opportunities for tiltrotor service, and possible applications of high-speed rail. It would also include development of a multi-modal transportation demand model for various ground modes to assess their ability to attract air passengers.*
- Policy constraints on existing air carrier airports should be defined in terms on environmental impacts and should remain in place, except where relevant noise, air quality, and ground access impacts are mitigated.² Airport proprietors and/or the Regional Airport Authority are encouraged to reassess constraints to determine if additional service can be provided, but in no case should constraints be lifted until negative impacts are mitigated.

MOBILITY BENEFITS

The improved inter-regional mobility benefits of an enhanced aviation system have an enormous implication for the economic development of the region. The challenge of the enhanced system is to meet environmental requirements.

² Significant impacts other than noise, air quality, and ground access that might occur over and beyond existing policy constraints should also be mitigated.

COMMERCIAL AIRPORT GROUND ACCESS

INTRODUCTION/BACKGROUND

In 1982, SCAG adopted policies that support increased air service, but only if the resulting environmental and ground access impacts are mitigated. This was interpreted to mean that impacts associated with air service above policy constrained levels in 1982 would be mitigated.

The outcome of the mitigation policy was the Airport Impact Mitigation and Management Study, Phase I study (AIMMS), which was completed in 1985. That study contains an inventory of noise, air quality, and ground access impacts for the base year of 1982 and the forecast year of 2000. Later, consultants to SCAG prepared a comprehensive list of mitigations for each impact category, which are contained in the 1990 Phase II report.

The AIMMS studies, and others conducted by local agencies, have focused predominantly on highway facilities. However, state law now requires multi-modal ground access studies for all commercial airports, and the federal Intermodal Surface Transportation Efficiency Act (ISTEA) emphasizes the need to assess airport ground access in the context of regional intermodal access of the MTS as a whole. Consequently, detailed intermodal studies and transportation modeling will be conducted by SCAG for all five commercial airports. The first of these studies is for LAX and began in 1993. These studies will follow guidelines for the ISTEA Inter-modal Management System.

RECOMMENDED GOAL

- Provide adequate intermodal ground access for air passengers and air cargo to the region's commercial airports so that they can fulfill their transportation and economic functions.

RECOMMENDED OBJECTIVES

- By 1995 to conduct adequate intermodal and multi-modal analyses of ground access to the region's five metropolitan commercial airports.
- Provide an environmentally compatible ground access system and to meet all air quality standards.

ASSESSMENT OF NEEDS AND DEFICIENCIES (FINDINGS)

The consultants to the AIMMS study identified three tiers of roadway improvements for each airport area and prepared cost estimates for them. Needed roadway improvements will be updated in upcoming modeling and airport access studies. However, they will only be one component of the access studies; other components will include transit, Transportation System Management (TSM) and Transportation Demand Management (TDM).

Findings

Even though there are serious limitations to the AIMMS data, a number of observations can be made that will be relevant to future airport ground access studies.

- A wealth of traffic and engineering studies have been produced for the highway element of ground access at all five commercial airports. However, much more work is needed for transit, rail, TDM, TSM and the intermodal connectivity with the rest of the MTS.
- Total congested lane miles at the five airports would increase from 222.3 in 1982 to 466.0 by year 2000, which is a 109.6 percent increase. While these figures do not account for recent developments, they suggest a significant increase in congestion by 2000 and imply an even greater increase by 2010. These increases in congestion highlight the need to emphasize non-auto strategies for improving airport ground access.

RECOMMENDED POLICIES

- In accordance with state law (Assembly Bill 2487), SCAG will conduct multi-modal and intermodal ground access studies of the region's commercial airports for each update of the Regional Transportation Plan (RTP).
- Traffic impacts generated by significant new off-airport development should be mitigated if they worsen ground access to a commercial airport and reduce that airport's operational capacity. This especially applies to those areas where the commercial airport is host to nationwide and international air service. *This type of mitigation should be a condition of project approval.*
- Traffic impacts generated by non-aviation developments on-airport should be mitigated through prudent planning. Such development is encouraged for revenue purposes, but only if it

utilizes excess capacity not needed for aviation purposes.

- *SCAG, in cooperation with appropriate transportation agencies, should ensure that airport-related ground access projects are placed in the Regional Transportation Improvement Program (RTIP). It is important to include airport planning staff in the identification of airport-related projects, especially those which link directly to the airport roadway system.*
- *Support development of a multi-modal transportation demand model which integrates various ground transportation modes.*

MOBILITY BENEFITS

LAX is the region's gateway to the rest of the world, particularly the Pacific Rim. It is also the gateway to the rest of the nation. In those two roles, it provides invaluable mobility for the region's citizens and is a significant factor in the regional economy.

The subregional airports provide mostly intra-state mobility, which is invaluable in terms of mobility and the economy. They also serve more local air passengers, and take pressures off LAX and its ground access system.

COMMERCIAL AIRPORT AIR CARGO

INTRODUCTION/BACKGROUND

The shipment of freight by air is a growing phenomenon in the SCAG region. It parallels the region's increased integration into the global economy, the growing importance to that economy of quick and reliable freight movement, and the expanded production of high-value and time-sensitive products. Airborne exports have become increasingly important to the region's economy, as evidenced by the fact that the total value of airborne exports shipped out of the Los Angeles Customs District now exceeds the value for waterborne exports.

During the past 12 years (1979-91), cargo volumes at the five air carrier airports in the region have increased by about 72 percent, from about 922,000 tons to about 1.5 million tons. It is interesting to note, however, that even during this recessionary period, international air cargo volumes increased by 19 percent during the first nine months of 1992. Because of ongoing structural changes in the economy, total air cargo volumes are expected to rise once again when recessionary conditions abate. Projections made by a recent SCAG study, Air Cargo in the SCAG region, indicate that volumes are expected to reach 2.7 million tons by the year 2000, and 4.8 million tons by 2010. Commercial airport capacity to handle air cargo will only reach 3 million tons by year 2000, so there will be a shortfall of capacity after that. Closing military air bases may ease that capacity shortfall.

RECOMMENDED GOAL

- Enhance air cargo handling capacity to serve demand and reduce congestion.

RECOMMENDED OBJECTIVES

- Quantify major trends in the air cargo industry since the advent of deregulation in 1979.
- In the 1995 Regional Aviation System Plan, recommend measures to reduce projected shortfalls in cargo handling capacities by enhancing the cargo handling efficiencies of existing cargo facilities.
- Recommend measures to reduce projected shortfalls in cargo handling capacities by adding major capacity increases to the existing system in the form of new or converted airports, or military airports if they became available.

ASSESSMENT OF NEEDS AND DEFICIENCIES (FINDINGS)

The results of the recent air cargo analysis indicated the following:

- Existing and currently planned cargo handling capacity in the region are able to accommodate projected year 2000 cargo volumes. However, existing and planned capacity falls short of meeting the 2010 projection by about 63 percent.
- The greatest need for new cargo handling capacity in the region is to serve Orange County, not only to provide additional needed capacity, but also to minimize trucking impacts on the regional highway network associated with transporting cargo from Orange County manufacturing centers via truck to other airports. Since John Wayne Airport has very limited capacity potential to serve air cargo, other alternatives should be examined.

RECOMMENDED POLICIES

- Support development of a comprehensive strategy to find additional air cargo handling capacity in the region to reduce projected shortfalls in that capacity. A regional strategy should locate potential additional capacity as close to where cargo is produced as possible, and should evaluate the feasibility and relative effectiveness of new airports, conversion of military airports to commercial uses, and increasing cargo handling efficiencies at existing airports.
- *Ground freight routes should be planned that minimize impacts upon residential neighborhoods and heavy commuter routes.*
- *The conversion of Norton AFB to civilian/commercial use is a most promising alternative for adding substantial new cargo handling capacity to the regional airport system.*
- For those military airbases that are, or will be closed by the Department of Defense, support conversion to commercial air service, including air cargo, if such bases have been determined to have a high technical and market potential for use as commercial air passenger and air cargo service airports. This policy most strongly applies to those subregions that cannot otherwise provide sufficient, environmentally acceptable capacity to meet their own local air cargo shipment demand.
- *Examine feasibility of commercial air cargo service at remaining active duty air bases if invited to do so by the military.*
- Long-term trends in the regional economic profile of Southern

California, their relationship to the world economy, and their implications for air cargo forecasts and handling capacity shortfalls, should be explored in an aviation strategic plan for the SCAG region.

MOBILITY BENEFITS

The primary mobility benefit that would potentially result from the implementation of the study's recommendations would be increased number of air passengers that could be served through the more effective use of available airport capacity, as well as future capacity increases such as the conversion of Norton AFB to a major air cargo facility. Since airports would also be less congested, there would also be fewer flight delays and less passenger inconvenience. This is in recognition that all of the air carrier airports in the region are ultimately subject to capacity constraints, and that there is competition between cargo and passenger flights for available airport capacity.

Another potential mobility benefit would be the reduction of impacts of cargo-carrying trucks on the regional highway system, resulting from locating additional cargo handling capacity close to where the cargo is produced. In particular, the location of new cargo-handling capacity near manufacturing centers in Orange County would have significant beneficial impacts on surface transportation mobility.

INSTITUTIONAL ISSUES

INTRODUCTION/BACKGROUND

An airport may at once be a local, regional, national, and international asset. For many years, there has been a policy question as to which of these levels should predominate in planning for and operation of commercial airports.

Local communities affected by busy airports have emphasized the need for local participation in the mitigation of environmental and ground access impacts. While there has been progress in mitigating impacts over the past decade, particularly in the area of aircraft noise, environmental concerns remain for a number of affected communities.

The business community has generally emphasized the regional, national, and international aspect of commercial airports in their role as generators of economic activity. This role is of growing importance during the prolonged recessionary period experienced in the SCAG region. The

importance of the role of commercial airports in economic recovery is presented in the Aviation Strategic Element of this chapter. However, to fulfill this economic role, commercial airports must accommodate the demand for increased air service which generates impacts of concern to local communities.

A number of mechanisms have been developed to achieve a balance between airport growth and environmental mitigation. In terms of noise, the Federal Aviation Administration (FAA) developed the Federal Air Regulation (FAR) Part 150 Noise Study program which included the participation of adjacent local jurisdictions. Part 150 studies were conducted for LAX, Burbank, Long Beach, and Ontario airports. These studies satisfied some communities, but not others. In addition, some local jurisdictions felt excluded from the Part 150 process and seek a mechanism to address their concerns. In other cases, local concerns resulted in environmental lawsuits which produced mixed results. SCAG has occasionally functioned as a mediator, but has no statutory authority in the area of airport noise.

In terms of air quality mitigations, SCAG does have a statutory role in the development of aviation Transportation Control Measures (TCMs) which appeared in the 1989 and 1991 Air Quality Management Plan (AQMP). The TCMs necessarily relate to airport ground access which is another area where SCAG has a role. SCAG is now required by state law to conduct multi-modal airport ground access studies as noted earlier in this chapter.

The mechanisms noted above and others have brought satisfaction to some communities, but not others. This is particularly the case in terms of airport noise. A number of local elected officials have indicated that an adequate mechanism has yet to be developed to address their concerns, and that this issue needs to be acknowledged.

GENERAL AVIATION AIRPORT SYSTEM

INTRODUCTION/BACKGROUND

The primary focus of SCAG's aviation planning has traditionally been on the commercial airport system. However, the system of 44 general aviation airports in the SCAG region is the largest regional system in the world, and is deserving of SCAG's attention. This general aviation system is predominantly represented on SCAG's Aviation Technical Advisory Committee (ATAC). All airports in the region are represented on ATAC, which is one of the longest-standing and most active of SCAG's committees. Collectively, general aviation and commercial airport managers have made immense contributions to SCAG's aviation planning during a very long period of time.

The last SCAG General Aviation System Study was completed in 1987. A data update of the region is urgently needed, to verify trends that appear to be underway, and to formulate regional policy to guide the system in the future. A general aviation study began in the summer of 1993, and is under the guidance of ATAC. The resulting general aviation plan will identify capital needs, funding shortfalls, and new roles which general aviation airports could pursue.

AVIATION STRATEGIC ELEMENT

INTRODUCTION/BACKGROUND

In economic terms, the SCAG region is one of the largest metropolitan areas in the world. In 1991, the gross regional product of the SCAG region was \$331 billion, making this region the 10th largest "nation" in the world economically. A few of the economic issues are described below and could be included in the Aviation Strategic Element. Accordingly, it has important financial, technical, social, and political relationships with other large economic regions in the world. All these relationships have implications for air travel and airport infrastructure, but they have never been studied in a systematic way. There is a need to assess and examine these relationships to better understand and formulate regional policy to guide the aviation system during the next two decades. That assessment would result in an Aviation Strategic Element of the regional Aviation System Plan, which is part of the RME. The following is a short description of some of those relationships that need to be examined.

Airport Capacity and Air Service Implications

- The capacity of commercial airports is nearing physical limits in this region, but also in other metropolitan regions in this country, around the Pacific Rim and in parts of Europe. What are the implication for the air movement of people and goods, and what are the implications for the regional economy and growth? Also, what implications does this have for closing military air bases?
- Considerable additional airport capacity will be made available at the new Denver Airport and at the potential new international airport on the U.S.-Mexico border south of San Diego. Other capacity remains at existing airports in the San Francisco Bay area and Portland. What are the implications for the production and movement of air cargo? Does this portend the shift of production from the SCAG region to other regions?
- How does the commercial airport system benefit the regional economy and job creation? How does the benefit compare to the cost of investment in airport infrastructure?
- Commercial air routes from Pacific Rim countries over the former Soviet Union to Europe are currently being negotiated. Since those routes are more direct and are shorter, will Pacific Rim air traffic bypass the U.S. and the SCAG region? What are the implications for the regional economy and trade?
- International air service for both air passengers and air cargo is the fastest growing component of air service and travel demand in the SCAG region. Will LAX be able to handle all of the international air service or will the other commercial airports need to accept international flights in the future? *While it is recognized that not all subregional commercial airports can accommodate international service it may be important to identify which ones can. It may also be important to identify which of the closing military airbases can handle international service.* What are the implications for Customs service and additional Customs districts? Will domestic service at LAX have to be constrained to accommodate the international traffic? Will the subregional airports need to host more medium- and long-haul service?

Economic Implications

- The SCAG region has many economic ties with other regions in the Pacific Rim, Canada, Latin America and Europe. What are the major economic trends in these other regions and what is the nature of their ties to the SCAG region? What is the future for

international commerce and tourism between the U.S. and its international trading partners? What are their implications for commercial airports and air service in the SCAG region?

- The North America Free Trade Agreement (NAFTA) may soon be ratified. What are the long-term economic implications for Southern California, particularly in terms of economic development in Mexico? How will this affect the potential new U.S.-Mexico international airport and commercial airports in the SCAG region? How might it affect air cargo commodity production and movement in the SCAG region? What percentage of the cross-border cargo movement stimulated by the agreement will move by air versus trucks?

Technology Implications

A number of new technologies are now being implemented and others are on the horizon. They all have implications for the aviation system, a few of which are noted below.

- The Global Positioning System (GPS) is a multiple satellite system now being put in place. Its accuracy will revolutionize the air navigation system and precision approaches. What affect will GPS have on airspace and airport capacity?
- Some aircraft manufacturers have indicated their desire to produce a mega-airliner (800-1,000 seats), although currently there is no movement in that direction. Will economic recovery of the airlines and a shortage of airport capacity lead to renewed interest in the mega-airliner? Will such an aircraft significantly increase the air-side capacity of the region's airports? Can the airports accommodate such an aircraft?

ISSUES IN NEED OF FURTHER STUDY

As the SCAG region's airport system moves through the next two decades, it will experience major problems, but it will also provide significant opportunities for the larger community. In that context, the following outstanding issues should be addressed in SCAG's aviation planning program.

- The provision of adequate commercial airport capacity will continue to be the major challenge for the region's airport system. After the year 2000, the system will gradually experience a shortfall of capacity for serving both air passengers and air cargo. Further studies need to examine the implications for high-speed rail, remote airports, and the reuse of closed military air bases.
- As the commercial airports near their physical capacity, ground access traffic congestion will worsen and may become the constraining factor in airport operations. Further airport ground access analysis and modeling are needed to identify appropriate multi-modal and inter-modal solutions.
- General aviation airports in the region's airports system are experiencing the same fiscal pressures as local governments. SCAG's current general aviation study will examine how these airports can survive financially and what emerging roles will reinforce their value to the community.
- During the next two decades, the SCAG region will experience dynamics resulting from airport capacity limitations, competition from airports in other regions and changing international relationships. There is a need to develop an aviation strategic element to assess these larger issues. One of the key issues is how to enhance economic opportunities generated by the commercial airport system.

INTRODUCTION/BACKGROUND

To meet mobility needs beyond the year 2010 it is likely that future long-range corridors will need to be identified and preserved in the SCAG region. Long-range corridors are defined as locations beyond the year 2010 where potential multi-modal transportation facilities might be built or sites that may be enhanced by adding facilities to increase the multi-modal nature of the corridor.

This chapter highlights the importance of identifying future multi-modal transportation corridors and setting aside the necessary right of way, especially in areas where development may block an identified long-range corridor. Figure 9-1 provides a general description of corridors that have been identified and discussed through a variety of study efforts.

EXISTING SETTING

An early long-range corridor identification effort occurred in 1986-87 when SCAG, Riverside County Transportation Commission, San Bernardino Associated Governments, and Caltrans District 08 met to define long-term transportation needs for the urbanized portions of Riverside and San Bernardino counties. From 1988-89, SCAG's Overall Work Program set forth a program to expand the earlier long-range corridor identification effort. The Inland Empire Long Range Corridor Study is ongoing and completion is expected in the fall of 1993.

Other corridor identification efforts include studies completed by county transportation commissions e.g., the Sierra-Cedar, the North-South, and the Cajalco Corridor studies. Caltrans through their system management plans have also identified future multimodal and intermodal corridors and longterm gaps.

Depending on the degree of urbanization the application of different long-range corridor strategies is foreseeable. In the highly urbanized portions of the SCAG region, long-range corridor projects that enhance existing corridors requiring the acquisition of little right-of-way or using abandoned railroad lines are probable approaches. In the less-urbanized areas, more possibilities exist to identify and preserve new long-range corridors. Local governments have an opportunity to capitalize on preservation efforts, before urbanization reduces the availability of land for new transportation facilities, especially in areas that already have insufficient transportation capacity but are continuing to grow. Early efforts to identify and preserve right of way will reduce costs and minimize the difficulties of developing a corridor.

POST 2010 LONG RANGE CORRIDORS 1993 RME DRAFT

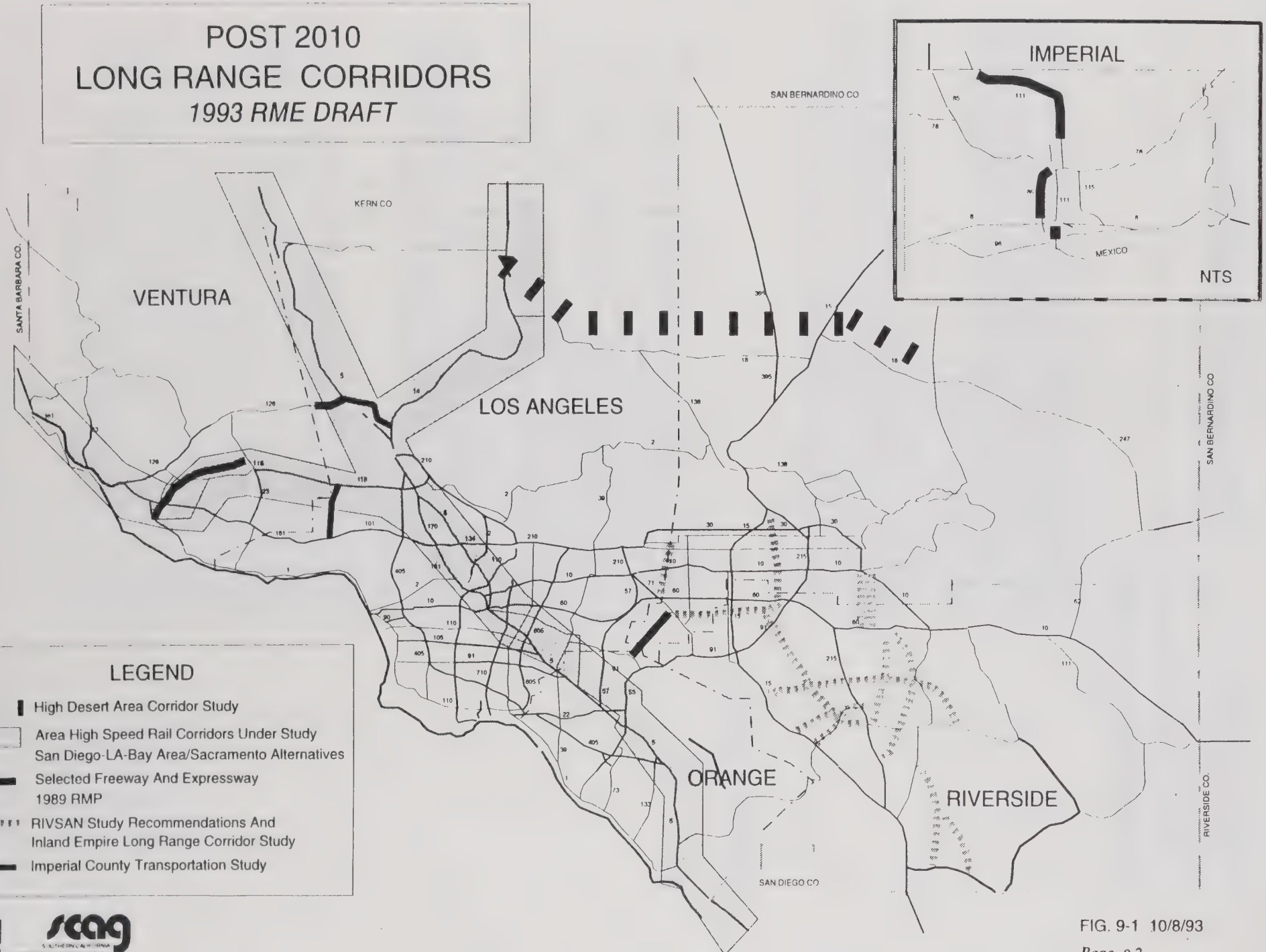


FIG. 9-1 10/8/93

POLICIES

Guiding policies toward the development of long-range corridors include the following:

- Support long-range corridors that will employ multi-modal and intermodal strategies designed to maintain mobility for people, goods, services, and information in ways that are safe, efficient, cost effective, meet environmental mandates, and foster economic development.
- Support long-range projects and right-of-way preservation programs that foster the development of an urban form conducive to reducing single-occupant vehicle trips.

ASSESSMENT OF NEEDS & DEFICIENCIES

Reports such as the Los Angeles County Transportation 30-Year Integrated Transportation Plan, Imperial County's Transportation Plan, the Orange County Transportation Authority's Long-Range Transit Systems Plan and Development Strategy, plus the Orange County 2020 Vision (presently being drafted) illustrate the type of long-range corridor concepts that will need to be included in the region's future mobility plans. To develop these types of corridors there will need to be more linkages between land use planning and transportation planning efforts. At present there are limited provisions at the local level for this type of coordination, especially with regard to preserving right-of-way. Regardless of how difficult the process, the future economic well-being of this region is dependent on how well post 2010 transportation needs are addressed.

RECOMMENDATIONS

Given the number of long-range plans focused at the county level, a regionwide post-2010 long-range corridor study is needed to provide a broader perspective of future needs. This effort should focus on the identification of corridors, the protection of right-of-way, and the development of the institutional framework to formalize the process. This effort will require developing criteria that guides the identification and prioritization of corridors and will involve considerable consensus building amongst competing public and private interests.

Implementing the recommendations presented above would probably best be served by first developing a public information program that details the importance for local governments and subregions to proactively develop a long-range corridor strategy. A first step would include identifying studies done at the local level or other area, corridor, and

subregional studies that identify long-range needs. In addition, the long-range corridor effort should also involve the identification and setting aside of ROW for utility, communication, and freight corridors.

MOBILITY BENEFITS

The identification, prioritization, and implementation of projects on post-2010 corridors provides the opportunity to develop multimodal and intermodal transportation systems that can provide benefits over present-day efforts constrained by managing congestion with limited resources. In the highly urbanized portions of the SCAG region, the enhancement of transportation corridors that move people and goods more efficiently with less reliance on the single-occupant vehicle will produce significant mobility benefits in this auto-oriented environment. In the less urbanized areas, the opportunity exists to develop corridors that meet a variety of transportation needs but may also influence the development of an urban form that will substantially improve all aspects of mobility.

ISSUES IN NEED OF FURTHER STUDY

- What additional corridors should be included?
- What are the appropriate actions to preserve identified corridors?
- What are the priorities of these corridors for the implementation of transportation facilities and services?
- What are the financial and mobility benefits for the early identification and purchase of right of way?

CHAPTER TEN: FINANCIAL PROGRAM

INTRODUCTION

The 1989 Regional Mobility Plan (RMP) (for the period 1990 through 2010) forecast transportation capital revenues of about \$21 billion against planned capital expenditures of about \$44 billion thus identifying a \$23 billion deficit. In addition, the 1989 RME projected an annualized operating and maintenance shortfall of almost \$3 billion. Under the planning "ground-rules" existing at that time, there was no need to balance expenditures and revenues. The 1989 RMP did not identify specific ways of meeting the projected deficits although it did offer suggestions.

Enactment of the federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) changed the playing field. Under the new requirements, the Plan must do the following:

"Include a financial plan that demonstrates how the long-range plan can be implemented, indicates resources from public and private sources that are reasonably available to carry out the plan, and recommends any innovative financing techniques to finance needed projects and programs, including such techniques as value capture, tolls, and congestion pricing."¹

"REASONABLY EXPECTED" OR "INNOVATIVE"

The language of ISTEA states that "innovative" financing techniques may be recommended in the Plan. For a funding technique to be considered "innovative," the technique must not be in the implementation process, or approved for implementation, in the SCAG region as of the date of Plan adoption. For example, tolls will not be considered innovative since they are currently approved for implementation within the SCAG region. Congestion pricing techniques will be considered innovative since they have not been approved anywhere in the SCAG region. Innovative financing techniques will be evaluated against the criteria for determining reasonably expected. *While Innovative Techniques do not require a YES to all criteria, decision-makers should consider the evaluation in determining if the funding technique should be recommended in the Plan.*

Discussions with Federal Highway Administration officials suggest that while they will accept local decisions with respect to reasonably expected

¹ ISTEA (23 USC 134 et seq.)

innovative funding, *they will look for post-plan adoption actions to determine the commitment of the region to implementing the innovative measures.*

Proposed implementing regulations of the Clean Air Act include the following:

"§51.399 Fiscal constraints for
transportation plans and TIPs

"(a) *Transportation plans.* The ISTEA requires that the transportation plan include a financial plan that demonstrates how the transportation plan can be implemented, indicates resources from public and private sources that are *reasonably expected to be available throughout the plan's timeframe, and recommends any innovative financing techniques to finance needed projects and programs,*[emphasis added] including such techniques as value capture, tolls, and congestion pricing.

"(b) *TIPs.* *The ISTEA requires that full funding must be reasonably anticipated to be available for a project,*[emphasis added] or an identified phase of a project, within the time period contemplated for completion of the project prior to its inclusion in a TIP. The ISTEA also requires a financial plan that demonstrates how the TIP can be implemented, indicates resources from public and private sources that are reasonably expected to be made available for its implementation, and recommends any innovative financing techniques to finance needed projects and programs."

There is additional language in the Clean Air Act that strongly supports the requirement that conformity requires a funding commitment:

"(B) no metropolitan planning organization or other recipient of funds under title 23, United States Code, or the Urban Mass Transportation Act shall adopt or approve a transportation improvement program of projects until it determines that such program provides for timely implementation of transportation control

measures consistent with schedules included in the applicable implementation plan;"²

The Clean Air Act amendments of 1990 provide that the long-range plan and the RTIP are subject to conformity requirements. This requirement means that the RTP and the RTIP must meet the air quality objectives established in the applicable State Implementation Plan. Accordingly, this means that the programs and projects proposed in the plans must be implemented according to defined schedules and that there must be funding available. Thus the question becomes how to prepare a conforming RTP and program that might include funds that may not be available at the time of adoption.

SCAG is defining³ "reasonably expected" funds to include all *existing sources* at the federal, state, and local levels. For certain measures that have a defined lifetime (e.g. local sales tax measures in several SCAG counties), the "reasonably expected" funds will not continue past their defined life. For other measures, (e.g. funding authorizations under ISTEA), it is assumed that these sources will nonetheless continue at the same level in current dollars as there is strong historical data to support this assumption.

CRITERIA FOR REASONABLY AVAILABLE FUNDING

SCAG is using the following criteria to determine whether a funding source should be considered "reasonably" available. These criteria are generally consistent with the Final FHWA/FTA Rules on Metropolitan Transportation Planning, issued on October 28, 1993:

- Has the proposed implementing agency (local, regional, state or federal government or private organization) taken a formal action by the time of Plan adoption to authorize the funding source?
- Is there a historical trend that resources of this type are usually approved by the public or their representatives?
- Have private sector organizations (such as the Chamber of Commerce, trade organizations, businesses, private task forces, etc.) shown support (e.g. policy, action, education) for the proposed funding mechanism?

² 42 U.S.C 7506

³ The definitions of "reasonably expected," and "innovative" as well as the criteria for determining "reasonably expected" have been approved as working definitions for the Regional Mobility Plan by the Transportation and Communications Committee of SCAG.

- Has the state or federal government taken action required as a prerequisite or condition for enabling the resource by the time of Plan adoption?

In order for a funding measure/mechanism to be considered "reasonably expected," each of the criteria must be answered YES or NOT APPLICABLE. Funding sources used to establish revenues have been subjected to the criteria and only those funding sources that have received a YES have been included in setting revenue estimates.

EXISTING REVENUE SOURCES

Under the working criteria for reasonably available, the following sources of funds are considered "Reasonably Available."

Federal Revenues

- Federal Fuel Tax (through Highway Trust Fund) (Portion allocated to Transportation) Will continue at current rate through authorized period.
- General Funds will continue at current levels. The two foregoing sources provide the funds for the following ISTEA programs:
 - Interstate Completion, National Highway System, Surface Transportation Program (STP), Congestion Mitigation and Air Quality (CMAQ), Federal Lands, Federal Transit Section 3 Discretionary, Federal Transit Sections 9, 16(b)2 and 18 Formula, Federal Lands

State Revenues

- State Fuel Tax will continue at rate authorized by statutes approved as of 1993.
- General Funds will continue at current levels.
- State Transit Bonds assumes \$3 billion as approved by voters in 1990 (Prop. 108, 116).
- Registration/Weight Fees will continue at rate authorized by statutes approved as of 1993.
 - The foregoing state revenue sources fund the following State Transportation programs:

- Local subventions, TSM, State-Local Partnership, Enhancements, Maintenance and Rehabilitation, Flexible Congestion Relief, Soundwalls, Interregional Roads

Local Revenues

- Transportation Development Act (TDA) will continue for entire plan period.
- County Sales Tax Measures will continue for entire plan period (through 2015) for Los Angeles County and through authorized life (through 2010) for Imperial, Orange, San Bernardino, and Riverside Counties.
- County Bond Measures. Any county bond measures currently authorized by voters are considered reasonably expected even if actual bonds not marketed
- Private Bond Measures. Any private bond measure currently authorized by the required private organizations are considered reasonably expected even if actual bonds have not been marketed.
- Benefit Assessment District Revenues. Any revenues being received from currently authorized benefit assessment districts are considered reasonable and will continue
- Development Fees. Current agreements for Development Mitigation Fees are considered reasonably available
- Toll Roads. Tolls from roads/projects currently open, under construction, or planned, which have legally complete and enforceable agreements, will be considered reasonably expected.

POTENTIAL REVENUE SOURCES

The following revenue sources are not considered reasonably available at this time. Upon further analysis, some of these may move into another category.

- Additional or New Local Sales Tax(es) for Transportation
- Increases in the Federal Fuel Tax
- Increases in the State Fuel Tax
- New Bond Measures

- New Tolls on roads/projects not subject to legally complete and enforceable agreements.

INNOVATIVE REVENUE SOURCES

The following revenue sources do not currently exist within the SCAG region. While they have potential for meeting the reasonably available funding criteria and being implemented during the time frame of the RME and the RTIP, they do not currently meet the criteria. These sources should be monitored for their potential for meeting the criteria. These and other sources should be studied, pursued, and developed in accord with other recommendations of the appropriate SCAG committee such as TCC, Implementation, Market Incentives Task Force, and Technology Task Force.

- Emissions Fees
- Congestion Pricing Fees
- Tariffs
- Accident Reduction Fees
- "Pay at the Pump" Funding (e.g. for Insurance)

The ability to finance transportation improvements in the SCAG region has increased greatly in the few years since the 1989 RMP was adopted due to increased federal funding authorizations under ISTEA, enactment of the California "Transportation Blueprint" in 1989 and subsequent statewide voter approval, and enactment of additional 1/2% sales taxes in five SCAG counties. Assuming the maintenance at current levels of local, state, and federal resources throughout the plan period at current levels, revenues are reasonably available to finance the "Constrained Alternative" 2B the Regional Mobility Element. All cost and revenues discussed in this section are summarized in the Table 10-1.

As stated earlier, the 1993 Financial Plan is significantly different from the plan in the 1989 RMP in that the current version must be financially constrained. That is, funds to support programs and projects included in the plan must be reasonably available. The programs and projects of the 1993 RME are collectively subjected to air quality conformity requirements. As such, there is a legally binding commitment to implement the programs and projects. Lack of funding may not be used as justification for not implementing those portions of the plan subjected to the conformity testing.

Matching projected revenues against projected costs over a twenty year period is extremely complex given the current fiscal environment. For

example, estimates of revenues and costs naturally have a built in assumption that the "project," "plan," or program is well defined and will not change over the forecast period. Unfortunately, this is not the case in Southern California. The usual (historical) trends in the economy are not being followed. California, somewhat immune to a recessionary environment in the past, seems to be hit harder than during previous cycles. Various earmarked funds for transportation are being examined for other purposes. On the cost side, more and more of the existing capital facilities of the transportation system are reaching the twilight of their useful life. Costs for maintenance and rehabilitation are rising. Following the Loma Prieta earthquake and the collapse of the Cypress Viaduct in the Bay Area, the State has embarked upon a very significant seismic safety rehabilitation program. It has proved more costly than anticipated and more roadways are affected than previously thought.

Table 10-1 illustrates a \$5 billion gap between projected revenues and costs. This deficit is a **regional** deficit. Tables 10-2A through 10-2F will illustrate County summaries when completed. **The projected deficit is not acceptable and discussions are underway to determine what steps are needed to produce a Plan which can be adopted.** It should be understood that while projections of actual cash and restrictions on the use of certain funds may leaves gaps in funding for specific program categories, the bottom line is that Plan as a whole must be in balance. For example, if transit operating costs exceed projected revenues, it may be acceptable to utilize surplus funds from another category to reach a balance. This analysis is also underway.

It is also possible that the overall revenues will decline as revenue projections are revised to reflect actual figures. As well, costs may increase if the adopted Plan adds projects to the Constrained Alternative rather than forcing a trade-off between projects.

REVENUE FORECAST

As with the 1989 plan, the financial summary presented here relies on revenues derived from federal, state, and local sources. While the involvement of each sector remains strong, it is important to note the significant effort made by the several local governments involved to finance improvements to, and maintenance of the transportation network.

Federal Share

The 1991 ISTEA defines federal participation in transportation financing. The Act is significant in several ways, including the added flexibility in the use of funds. This attribute is considered essential in heightening the efficiency of transportation investment. Also, the ISTEA recognizes the relationship between transportation and air quality policies. To this end, the ISTEA contains funds within the Congestion Mitigation and Air

Quality Program (CMAQ) to overcome the negative effects of the transportation network.

ISTEA provides roughly 110 percent of the funding available from the previous six-year period. The RME forecast assumes the same level of funding, less inflation, through the plan period. These funds are then anticipated to be distributed within the state based on the existing north-south split and county minimum allocations. Based on these assumptions, about \$14.3 billion will be available to the state from FHWA and FTA sources during the plan period.

Additionally, federal funding from the Federal Aviation Administration (FAA) and the Federal Railroad Administration may be available to finance portions of the Metropolitan Transportation System. These funds are currently not included in the Revenues and Costs of Table 10-1.

State Share

State revenues continue to reach the region through existing funding programs, including programs for system management, congestion relief and transit assistance. Also available is funding from Propositions 108 and 116. The latter, Proposition 116, authorizing the state to assume \$1.99 billion in long-term debt, was not anticipated in the 1989 RMP. Proposition 108, in addition to authorizing \$1 billion in debt, was the first of three such measures authorized by the California Legislature. The second of these measures to come up, Proposition 156, was defeated by the voters in 1992. However, the financial projections included here assume that funding covered by this proposition will be provided through a subsequent action by either the Legislature or the electorate. This assumption is based on the estimates of various funds, developed every two years and adopted by the California Transportation Commission.

Although some state transportation resources are derived in part from general taxation, the majority of transportation funds are gained from the state gasoline tax and motor vehicle license fees. The assumption that state funding will continue, less inflation, is made without regard for how the revenues are generated. It is strongly recommended, however, that the state continue to rely on the gas tax as a source of revenues, and that steps be taken to ensure a constant stream of funds, considering greater fuel efficiency standards and transition to alternative fuels.

With the assumptions stated above, it is expected that approximately \$13 billion will be available in the region from the state.

California statute (SB 707) requires that Regional Transportation Planning Agencies (SCAG is an RTPA), develop a regional airport capital improvement program. The Regional Airport Capital Improvement Program was completed for the first time in 1993. It contains \$2.2 billion in commercial airport projects and \$3.3 billion in

general aviation projects. Revenue data are not available, but a survey is underway to obtain the information. The \$5.5 billion is not included in the cost estimates of Table 10-1.

Local Sources

In the past few years, revenues generated at the local level has shown the greatest increase of all sources. Since the 1989 plan was adopted, five of the six counties in the SCAG region have adopted half-cent sales tax measures. Local efforts continue to receive support from the Local Transportation Fund, the quarter-cent sales tax collected by the counties. As well, the county transportation commissions are making strident efforts to realize the value of existing holdings and future investments through joint development and mixed-use facilities at transit-related sites.

Although the potential for generating revenues is great, certain distinct flaws in use of sales tax has become evident. Along with most general taxation alternatives, the sales tax is inequitable and fails to equate use of a service with the related costs. Also, as is evident not only in the region, but across the state and nation, this form of taxation is inseparable from the overall state of the economy.

Both the bus and rail networks will contribute to local revenues through farebox returns. It is anticipated that up to \$10.4 billion can be generated by the farebox, assuming the transit operators are allowed to keep fares in line with inflation. This issue has been continuously addressed by the transit community and public policy-makers generally, because of the needs of the transit-dependent. However, given that it is difficult to anticipate any general increase in subsidies, the transit properties must have the latitude to support operations through either fares or other internal revenue sources.

Despite these limitations, local share has become the dominant form of transportation financing. Through the Plan period, it is anticipated that about \$41.6 billion will be generated from local programs.

Although some \$68.9 billion in revenues are forecast, not all this amount will go toward programs identified in this plan. There are several small and large fund categories that are not relevant to the regional network. For instance, a large share of the ISTEA's Surface Transportation Program funds are generally intended to replace the former FAU-FAS funding. After accounting for these other programs, approximately \$57.4 billion is available to finance the Base Plan in the RME.

MARKET INCENTIVES

Uses of various transportation facilities are influenced by financial considerations. For example, a commuter who enjoys free parking at the

job site may tend to shun use of public transportation while a neighbor who has to pay for parking his vehicle might consider taking the bus. Another commuter might be persuaded to rideshare if there was some financial incentive. Towards this end, SCAG has established a Market Incentives Task Force to explore the ways that the market place may be used to influence the demand on transportation facilities.

Another example of a market incentive would be congestion-pricing. For example, use of a facility might be free during off-peak hours while a fee would be charged during peak demand periods. Or, perhaps, a facility might be free for a three-person carpool, a small fee for a two-person carpool, and a larger fee for a single occupant vehicle.

Currently, SCAG has applied for a grant to examine the impact of various fees on the Route 91 toll road between Orange and Riverside Counties. This grant will assess congestion pricing as a market incentive. The project will be incorporated into the Overall Work Program.

For additional information regarding market incentives, please see the discussion in Chapter 3, Regional Transportation Demand Management.

COSTS (EXPENDITURE PROJECTION)

The RME identifies six cost categories, including highways, regional streets and roads, rail capital and operating, bus capital and operating, Transportation Demand Management (TDM) and Non-motorized Transportation. The costs required to provide the levels of service identified in the Base Plan are presented below. (Please note that costs for TDM and Non-motorized Transportation are still in development.)

Highways

Increases identified in the highway network, including High-Occupancy Vehicle (HOV) lanes and all related facilities will cost approximately \$14.9 billion. However, this figure includes the cost of Orange County toll facilities that are not reflected on the revenue side. Excluding those projects, the total cost for the highway program is \$12.2 billion. Also not counted here are costs for maintaining the state and federal highway route network.

The highway component can be further divided into three categories; highway, HOV and a third component that here is called "Highway Blend". This last category includes those projects that include both mixed-flow and HOV lanes. The mixed-flow portion includes \$ 3.1 billion in improvements, HOV is \$4.7 billion, and the highway blend is \$4.5 billion. Each category includes related facility work that is not

always counted in terms of lane miles, such as interchanges, bridge work and ramp improvements.

Regional Streets and Roads

Integration of local arterials into the regional transportation network is supported by specific funding at all levels. In total, some \$700 million in costs are identified. As noted earlier, this figure does not include local maintenance efforts. Also excluded at this time are costs associated with improvements to the Alameda Corridor.⁴

Transit

The transit costs for the study period total \$35.6 billion for both capital and operating. The transit program contains roughly \$12.2 billion in rail capital and \$5.6 billion in associated operating costs. This total combines local, commuter and inter-city rail programs. Bus costs are composed of operating (\$17.3 billion) and related capital costs of \$500 million for bus replacement.

The transit costs assume no change in the aggregate level of bus service; the capital costs identified are for bus replacement only. However, some redeployment is likely. The rail expenses focus on the local services in Los Angeles County -- the Red, Blue and Green lines -- and Metrolink operations throughout the region. The SCAG baseline also includes six candidate urban rail corridors or corridor extensions not currently programmed by the implementing agencies.

It is anticipated that a substantial part of the transit operating deficit (approximately \$1.9 billion over the Plan period) will be met by increased revenues. Revenue alternatives are being developed by the Los Angeles County Metropolitan Transportation Authority. Adoption of a revised financial plan is expected during the Spring, 1994.

Local Programs

As noted earlier, local governments receive a share of federal, state and local funds for their own programs. These programs often have the potential for positively affecting regional transportation trends; for instance, signalization and intersection improvements are done from this mix of funds. However, the facilities involved are not considered to be regionally significant by definition; therefore, this investment is not identified as part of this analysis.

⁴ Local and Regional Streets and Roads operating and maintenance costs will be added to the Plan as they are known. It is expected that the costs will be supported by reasonably available funding sources. The Alameda Corridor Project is estimated to cost about \$1.3 billion (1993 dollars). Revenues to support these costs are being developed and will be added to the Plan when the Corridor Financial Plan is adopted (December, 1993). If the anticipated revenues do not meet the costs, certain projects may not be included in the Plan.

LIFE CYCLE COSTS

Life-cycle costs are taken into account through assuring that Highway operating and maintenance expenses are included. The State of California has enacted legislation which takes maintenance and operations costs "off-the-top" of funds available for state highway projects through the Highway System Operations and Plan Protection (HSOPP) program; these funds are not subject to the North-South split and/or county minimums. Transit bus replacements are scheduled every 12 years per federal guidelines. It is expected that approximately 300 buses will be replaced each year and these costs have been included in Table 10-1. An examination of rail transit replacement and rehabilitation costs, in addition to other bus transit life-cycle costs, is underway to insure that these costs are reflected in the financial tables.

FINANCIAL POLICIES

The 1989 Regional Mobility Element included several policies specifically related to Financial Objectives and Programs. These policies remain generally viable and are listed as follows: (suggested wording changes from the 1989 RME are shown in *italics*):

- Primary reliance should be placed on user based financing approaches to finance transportation projects.
- Increases in the *Federal*, State, and/or local fuel taxes and weight fees, and flexibility in their use, shall be supported to fund implementation of the adopted Plan and its identified programs *and projects*.
- The addition of local transportation taxes (e.g. local sales tax) in all counties should be supported to fund facility expansion, *operating* costs, system and demand-management programs of the adopted Plan.
- Peak period pricing, user fees or other mechanisms should be introduced to reduce peak period traffic demand.
- Value capture approaches to raising revenues (e.g. benefit assessments and development fees) should be used to recoup some of the costs of the capital and operating shortfalls.
- Increasing public funding levels for local streets and road shall be supported in order to reduce backlogged improvements needs with priority given to deteriorated facilities.

STP AND CMAQ PROGRAMMING POLICIES

In 1992, SCAG adopted several policies regarding programming of the federal Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Program (CMAQ) funds:

- Programming of the Surface Transportation Program (STP) funds and Congestion Mitigation funds shall be the primary responsibility of the respective County Transportation Commission, consistent with federal and state law, the Regional Transportation Plan (RTP), and in conformance with the applicable Air Quality Management Plan.
- Implementation of transportation control measures (TCMs) required by the Air Quality Management Plan, including growth and demand management measures, shall be a high priority for expenditure of all STP and CMAQ funds.
- Cities and Counties are eligible to utilize the STP and CMAQ funds for demand management and growth management transportation control measures and will be so advised by the appropriate County Transportation Commission.
- The County Transportation Commissions have the responsibility either directly or through an agreement to document expeditious implementation of the TCMs.
- A local Surface Transportation Program (LSTP) shall be developed and administered established within each County area consistent with state implementing legislation. LSTP projects will be prioritized in each County by the County Transportation Commission consistent with the new ISTEA federal legislation which requires multimodal flexibility. Maintenance and rehabilitation projects which do not increase capacity are exempt from conformity. Following a transition period not to exceed three fiscal years, all LSTP programming decisions must be based on a discretionary process; formula apportionments will no longer be acceptable. Each county area will be apportioned an amount not less than 110% of the FY 1990-91 FAU apportionment for the LSTP program. There will be a 2-3 year period, as needed, to transition from the old FAU program to the new LSTP to all projects currently in the adopted RTIP to continue without interruption.
- County Transportation Improvement Programs shall be submitted to SCAG before County Transportation Commission adoption for review and comment through the AB 1246 process. The Regional TIP will be adopted by SCAG following its

presentation and review by the 1246 Committee. SCAG adoption will include a conformity finding. If SCAG is unable to resolve identified conflicts, SCAG will adopt the components of the program which are possible to adopt and refer back to the respective CTC those projects which present conformity conflicts for reconciliation. In the event that the respective CTC is unable to reconcile the conflict in a timely fashion, recommendations will be made by the 1246 Committee.

ISSUES IN NEED OF FURTHER STUDY

The new federal transportation legislation, ISTEA, requires the Metropolitan Planning Organization (MPO) to demonstrate that revenues are reasonably assured of covering anticipated capital and operating costs of the RMP. In developing the Constrained Alternative, consideration must be given to how the region pays for the capital, maintenance, and operating requirements of the preferred transportation system. At the present time, the Draft Plan does not meet this requirement. This requirement must be addressed and resolved prior to Plan adoption.

In addition to demonstrating adequate financial resources to expand the existing transportation system to meet demand, the Plan must demonstrate adequate revenues to operate and maintain the existing system. While it appears that adequate revenues are available to operate and maintain the State Highway system, a closer examination must be made of the regional streets and roads system to determine if adequate funds are available to operate and maintain them.

Transit operating and maintenance costs are currently reflected in the financial tables of this Draft Plan. However, a detailed examination of these costs is being made to insure that these costs reflect current assumptions.

In developing the Draft Plan, revenues and costs are illustrated for the entire SCAG region. While some of the revenue and costs estimates can easily be broken into County totals, others were developed at the regional level. Work is underway to identify the revenues and costs of Table 10-1 at the County level. When completed the blank Tables 10-2A through 10-2F will be completed.

TABLE 10-1
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY (a)
1991 - 2010

PROGRAM	COST	%-AGE	REVENUE	NET
Highway Operating	\$6.4	11.8	\$6.3	(\$0.1)
Transit Operating	22.9	42.7	21.0	(1.9)
Regional Streets and Roads	0.7	1.3	1.4	0.7
Transit Capital	12.7	23.7	9.7	(3.0)
Highway Capital	10.6	19.6	9.0	(1.6)
Transportation Demand Management (b)	0.2	0.4	0.7	0.5
Non-motorized Transportation (b)	0.2	0.4	0.4	0.2
TOTAL - ALL PROGRAMS	53.7	100.0	48.5	(5.2)

(A) All dollars are in billions

(b) Estimated

TABLE 10-2A
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
IMPERIAL COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

TABLE 10-2B
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
LOS ANGELES COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

TABLE 10-2C
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
ORANGE COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

TABLE 10-2D
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
RIVERSIDE COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

TABLE 10-2E
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
SAN BERNARDINO COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

TABLE 10-2F
1993 REGIONAL MOBILITY ELEMENT
COST-REVENUE SUMMARY
VENTURA COUNTY

PROGRAM	COST	%	REVENUE	NET
Highway Capital				
Highway Operating				
Regional Streets and Roads				
Transit Capital				
Transit Operating				
Transportation Demand Management				
Non-Motorized Transportation				
TOTAL				

REGIONAL TRANSPORTATION CONTROL MEASURE (TCM) PROGRAMS

INTRODUCTION

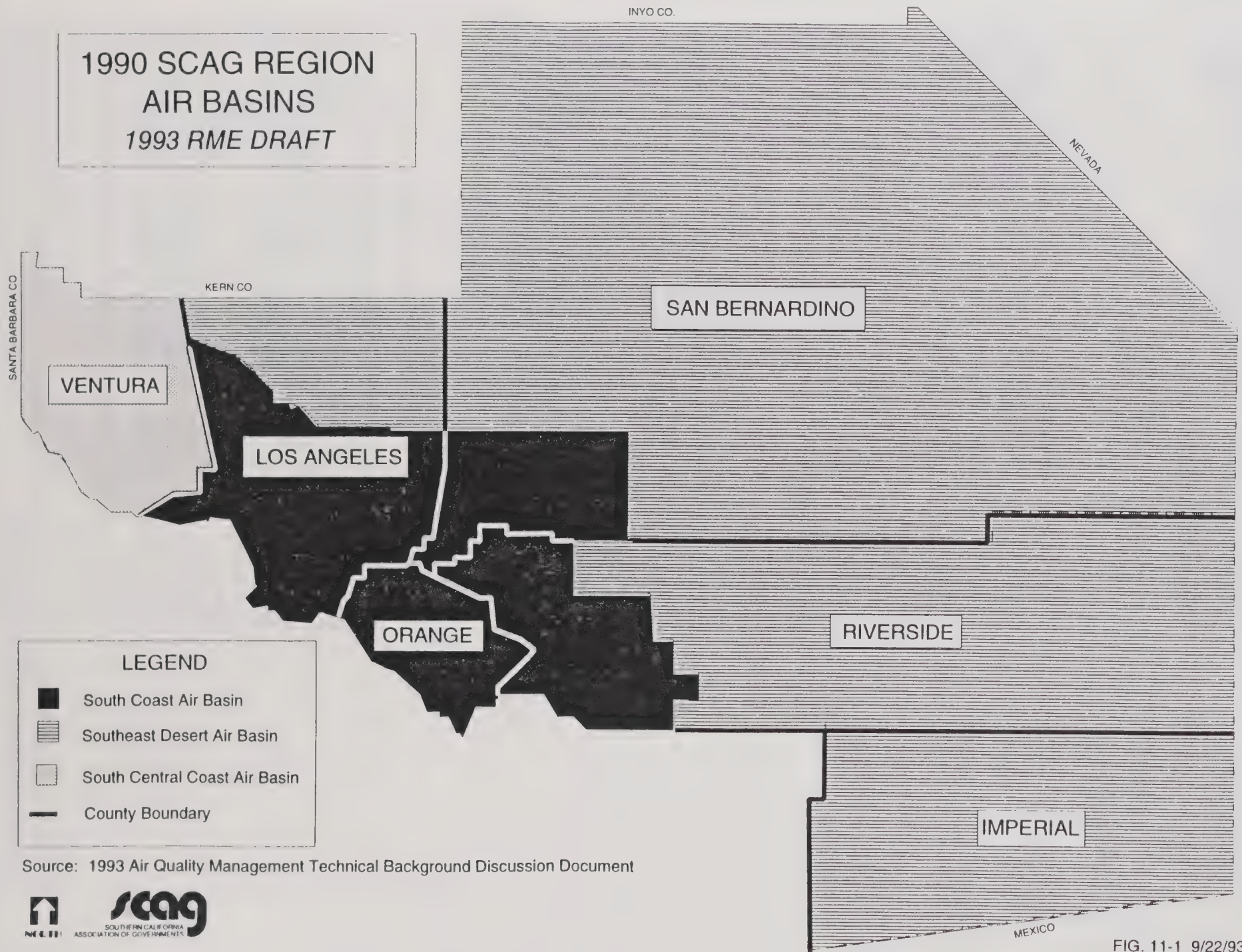
Transportation Control Measures (TCMs) are transportation and land-use-based strategies that are intended to reduce the amount of pollutants emitted into the air from motor vehicles by changing the way people make trips, alleviating traffic congestion and facilitating infrastructure changes to promote alternatives to single-occupant vehicles (SOV). Such measures span the range of mobility strategies contained in the Regional Mobility Element (RME) from provision of infrastructure to offer alternatives to SOV travel, traffic flow improvement strategies, changes in transportation pricing structures, changes in local land-use patterns, institution of demand management strategies, to restrictions on automobile use, and efforts to reduce aviation, goods movement and locomotive emissions.

Both federal and state legislation provide a significant role for the development, funding, and implementation of TCMs in non-attainment areas. It is crucial that the mobility strategies contained in the RME provide for the implementation of TCMs in the respective air quality plans to ensure that air quality improvements continue, and the flow of transportation funding to the region is maintained. Moreover, requirements at the state and federal level specify that all reasonably available TCMs be implemented as part of an air quality attainment strategy. The federal attainment status for each non-attainment area is summarized in Table 11-1. The air basin and air district boundaries are noted in Figures 11-1, and 11-2, respectively.

TABLE 11-1
STATUS OF NON-ATTAINMENT AREAS

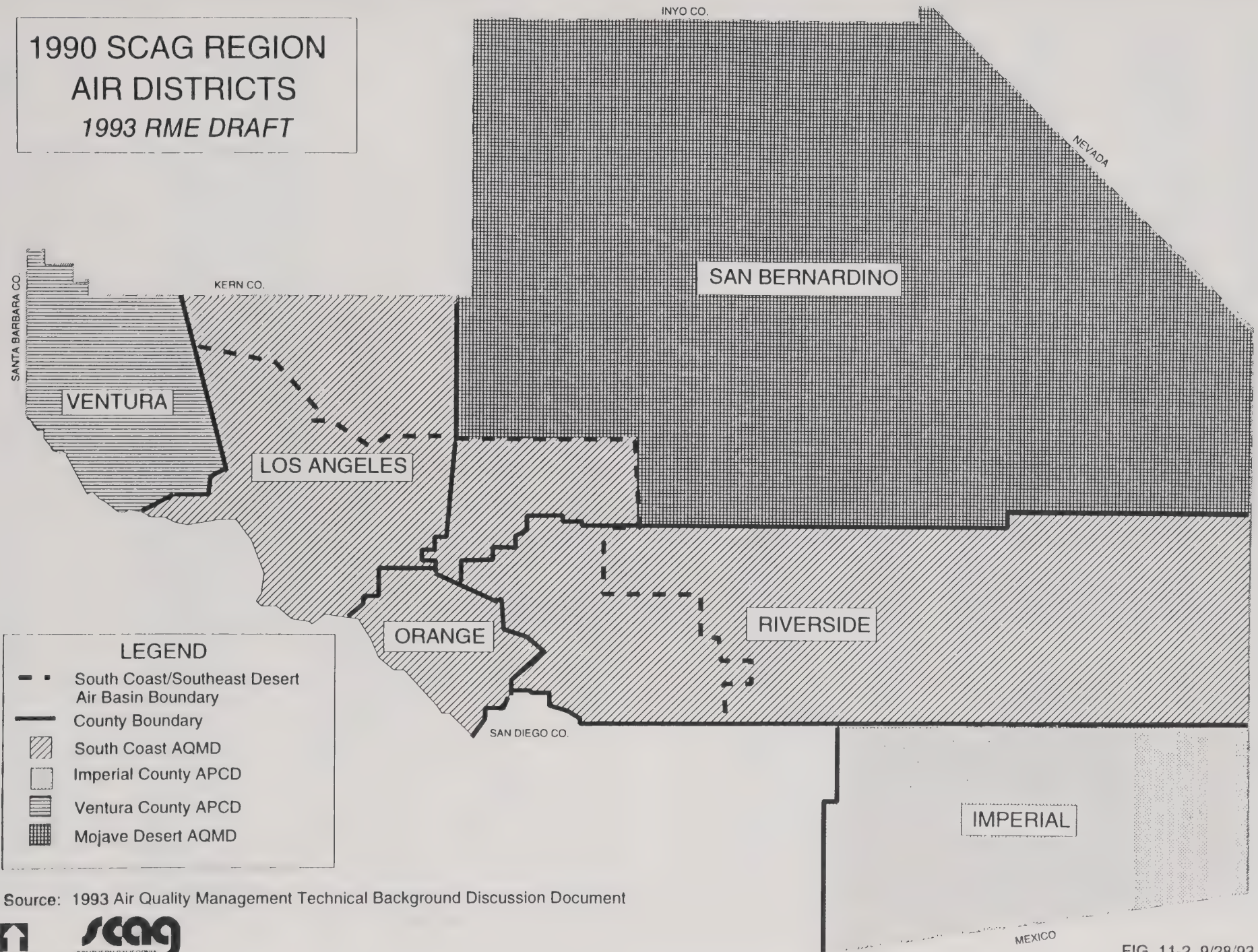
AREA	POLLUTANT			
	Ozone	CO	NO ₂	PM ₁₀
South Coast Air Basin	Extreme	Serious	Non-attainment	Serious
Ventura County	Severe	Attainment	Attainment	Attainment
San Bernardino County - Mojave Desert	Severe	Attainment	Attainment	Attainment Moderate (Searles Valley)
Coachella Valley	Severe	Unclassified	Attainment	Serious
Imperial County	Transitional	Unclassified	Attainment	Non-attainment
North Los Angeles County	Severe	Unclassified	Attainment	Attainment

1990 SCAG REGION AIR BASINS 1993 RME DRAFT



Source: 1993 Air Quality Management Technical Background Discussion Document

1990 SCAG REGION AIR DISTRICTS 1993 RME DRAFT



LEGEND

- South Coast/Southeast Desert Air Basin Boundary
- County Boundary
- South Coast AQMD
- Imperial County APCD
- Ventura County APCD
- Mojave Desert AQMD

Source: 1993 Air Quality Management Technical Background Discussion Document

The RME contains a broad range of potential strategies available for development as TCMs. Those strategies selected from the RME as TCMs will, however, have to be further refined to meet more stringent requirements placed on TCMs—enforceability, detailed accountability, and quantifiability.

The degree to which TCMs are to be relied upon in an area's attainment strategy is key in determining the mobile source emission budget used for conformity purposes. This budget is essentially the maximum amount of emissions that may come from mobile sources. In the event this budget is exceeded, both vehicle controls and TCMs must be used to mitigate the greater emission impacts.

The TCM chapter focuses on the efforts being undertaken in the region to refine TCMs for inclusion in the federal attainment plan submittals due to the Environmental Protection Agency (EPA) by November 15, 1994. Additional information on both the air quality plans, TCM implementation efforts to date, and overarching issues that have arisen in developing a comprehensive attainment strategy that contains TCMs can be found in the Air Quality chapter of the Regional Comprehensive Plan (RCP).

TCM Development and Implementation Requirements

By November 15, 1994, non-attainment areas for ozone are required to submit an ozone plan as required by the federal Clean Air Act (CAA). For severe and extreme non-attainment areas, these plans must contain TCMs. The South Coast Air Basin (SCAB), the Ventura County portion of the South Central Coast Air Basin (SCCAB) and Mojave Desert Air Quality Management District are in the process of refining the TCMs in the existing Air Quality Management/Attainment Plans for their respective areas. In addition, Federal Implementation Plans (FIP) are also in the process of being developed for SCAB and Ventura County.

Federal and State Requirements

Importance of TCMs in Attainment Plans

While the relative necessity of including TCMs in the overall air quality attainment strategy differs by air basin, failure to attempt to maximize their use in conjunction with all other strategies has the potential to create significant financial ramifications for the region. In the federal CAA, Section 179 (b)¹ provides for highway sanctions, which may be imposed by the EPA Administrator. Although safety projects are categorically exempted, all remaining projects could be sanctioned.

¹ 42 USC 7408

Both state and federal requirements exist for TCMs. These are contained in the federal CAA, the Lewis-Presley Act for the South Coast Air Basin, the California Clean Air Act (CCAA) for the Ventura and Southeast Desert Air Basin (SEDAB), and in the Intermodal Surface Transportation Efficiency Act (ISTEA). These requirements, noted in Table 11-2, identify actions that must be considered and requirements regarding transportation conformity and funding. Any mobility-based strategies intended to be included as a TCM in an attainment plan must meet these criteria. Moreover, the federal CAA requires the implementation of all reasonably available TCMs, as summarized in Section 108(f)² of the CAA and Table 11-3.

TABLE 11-2
TCM REQUIREMENTS

FEDERAL	STATE
108(f) list of TCMs	Implement TCMs considered reasonably available
TCMS must be: Enforceable Quantifiable Replicable Accountable	AQMP to provide for TCMs
Contribute to an increase in large employer peak period "AVR"	Cost-effectiveness
Offset growth of emissions due to increases in VMT or Vehicle Trips	Monitoring procedures for compliance and effectiveness
	1.5 AVO by 1999
	Substantially reduce the rate of increase in VMT
	Publicly Acceptable

Conformity

Conformity is the process by which the Metropolitan Planning Organization (SCAG in its six-county region), ensures that the projects, programs, and plans adopted, funded, and implemented in the region provide for the implementation of TCMs contained in the applicable State

² 42 USC 7408(f)(1)(A)

Implementation Plan (SIP) for each air basin. Section 176(3)(c)³ specifies that no department, agency, or instrumentality of the federal government shall engage in, support any way, provide financial assistance for, license or permit, or approve any activity that does not conform to an attainment plan after it has been approved. Thus, it is critical that the RME provide for the implementation of TCMs contained in the applicable attainment plans.

TABLE 11-3
FEDERAL REASONABLY AVAILABLE TCMs
Section 108(f)

1. Programs for improved transit
2. HOV and bus lanes
3. Employer-based transportation management plans
4. Trip reduction ordinances
5. Traffic flow improvements
6. Fringe and corridor park and ride facilities
7. Auto use restrictions
8. Provision of HOV/shared ride services
9. Limitations to encourage use of facilities/areas by pedestrians and bicycles
10. Bicycle facilities
11. Programs to control extended vehicle idling
12. Programs to reduce extreme cold start emissions
13. Employer-sponsored flexible work schedules
14. Programs and ordinances to facilitate alternatives to SOV use in planning and development, including new shopping centers, special events and other centers
15. Construction of non-motorized and pedestrian facilities
16. Programs to encourage voluntary removal of pre-1980 vehicles

TCM REFINEMENT EFFORTS BY AIR BASIN

SCAG, local governments, subregional associations, county transportation commissions, Caltrans, transit providers, airport operators, railroad and trucking industry, building industry, rideshare organizations, and others play important roles in coordinating with both each other and with the appropriate AQMD/APCD in developing and implementing TCMs. While it is anticipated that the breadth of strategies contained in the RME will be more comprehensive than the TCMs ultimately agreed upon in the 1994 AQMPs, to the extent that the TCMs are more ambitious, the RME may need to be amended.

³ 42 USC 7506(c)

South Central Coast Air Basin - Ventura County

The Ventura County APCD is undertaking the effort to re-examine the six groups of TCMs contained in the 1991 Air Quality Management Plan (AQMP). These include ridesharing strategies, non-motorized strategies, traffic-flow improvements, land-use strategies, transit, and clean fuels.

Since June of 1992, the Ventura County APCD has been holding meetings of its TCM Working Group to develop TCM options. Significant effort has been undertaken to provide all participants in the process with an understanding of both the state and federal requirements, prepare TCM issue papers, identify potential strategies and implementation actions, identify sources of funding for TCM implementation, describe legally enforceable mechanisms, obtain commitments to implement TCM actions, and integrate Congestion Management Program (CMP) processes and programs to receive air quality credit.

Mutually reinforcing actions of Rule 210 (Employee Commute Option) and the CMP are also identified. Quantification of potential TCM actions has also been a key work effort by APCD staff.

Southeast Desert Air Basin - desert portions of San Bernardino County

In the Mojave Desert Air Quality Management District portion of the SEDAB, the effort to develop and implement TCM has focused on implementing the 10 measures amended into the 1991 AQMP. Rule 1701 helps provide a foundation for much of the AQMD's current TCM framework.

In response to California Air Resources Board (CARB) comments on its 1991 Air Quality Attainment Plan and information from its newly reformed board, staff at the Mohave Desert AQMD are reexamining the area's attainment strategy, including TCMs. Efforts to date have focused on attempting to better identify what proportion of the emission and traffic problem are within the Mohave Desert AQMD's sphere of regulatory influence and attempting to identify appropriate strategies.

Southeast Desert Air Basin - Coachella Valley

As noted in Appendix II-A of the 1991 AQMP for the SCAB, the SCAQMD shares responsibility with the California ARB for the Coachella Valley portion of SEDAB. The SCAQMD is primarily responsible for stationary source controls while California ARB's responsibility lies with on-road vehicle emissions and some consumer products.

The primary pollutant being addressed locally in the Coachella Valley through the mobile source reduction strategies is PM10. While ozone standards are also exceeded, reductions in ozone precursors from the implementation of TCMs are seen as secondary benefits from the implementation of congestion relief and demand management measures. Substantial effort has been devoted by the Coachella Valley Association of Governments (CVAG) to developing a Transportation Demand Management (TDM) plan, which can serve as a framework, in conjunction with the facilities needed within the subregion, for the development and preparation of specific TCM strategies. Appropriate non-commute- and commute-trip reduction strategies are being examined. Local government efforts in Coachella Valley have been coordinated through CVAG.

While it is unclear to what extent TCMs could be used to mitigate air quality versus congestion impacts, this effort continues to evolve. One key focal area being examined is more closely linking CMP monitoring and mitigation programs with air quality programs.

Southeast Desert Air Basin - Northern Los Angeles County

Appendix II-A of the 1991 AQMP for the SCAB describes that the SCAQMD shares responsibility with California ARB for the Antelope Valley portion of SEDAB. The SCAQMD is primarily responsible for stationary source controls while California ARB's responsibility lies with on-road vehicle emissions and some consumer products.

The North Los Angeles County subregion has identified several key areas in which the planning and implementation of mobility strategies has occurred that could also potentially be credited as TCMs. These are implementation of the county CMP, implementation of deficiency plan strategies in areas in which deficiencies are identified, SCAQMD's Regulation XV program, and local California Environmental Quality Act (CEQA) review, mitigation requirements, and monitoring.

South Coast Air Basin

Section 40460(b) of the State Health and Safety Code states that SCAG is responsible for the development of the TCMs to be included in the AQMP for the SCAB.

Subregional Input into the South Coast Air Basin TCMs

In concert with the committee structure described above, the performance-based approach to TCMs called for by subregions in the 1992 Carbon Monoxide Plan has been used to assess how TCMs could be refined for the 1994 AQMP. This process was intended to continue the evolution from strict "command and control" implementation of TCM actions to a more performance-oriented approach to TCM development and implementation. Control Measure FC-4, "Additional Vehicle Miles

Traveled/Vehicle Trip (VMT/VT) Reduction Strategies". in the 1992 Carbon Monoxide Plan offered an interim stepping stone in the development of a performance-based approach.

Through provision of subregional performance targets, use of quantification methodologies, and reporting of results, local governments and subregions have been able to more clearly identify what they can more realistically expect from the implementation of different types of TCM actions. More readily identified as a result of this effort are actions that subregional members are taking; local government actions they would like to take and receive credit for mobility, but for which a barrier to implementation or taking air quality credit exists; and actions that are not supported under existing circumstances.

Information provided by subregions have offered recommendations on various types of transportation strategies that should be contained in the RME. These are reflected in the individual chapters. On a broader basis, however, subregions have offered several suggestions on how to approach the framework for TCM development and implementation, which are summarized in Table 11-4.

TABLE 11-4
SUBREGIONAL TCM RECOMMENDATIONS

TCM RECOMMENDATIONS	SUBREGION
Coordinate transportation network improvements with land use decisions (and other specific characteristics)	Arroyo Verdugo Western Riverside COG
Ensure that expectations for TCMs are realistic, technically sound and/or clearly and appropriately establish specific role and responsibilities	City of Los Angeles Westside Cities South Bay Cities Association
Ensure that credit be given for transportation and other local government actions which have positive air quality benefits	City of Los Angeles
Support intensified/mixed land uses as part of the transportation solution for local governments who choose to implement these alternatives	SELAC Western Riverside COG
Explore the use of market-based trip reduction incentives/disincentives	SELAC City of Brea Riverside County Transportation Commission South Bay Cities Association
Support policies that further new technologies, use of alternative fuels and/or zero-emission vehicles	SELAC South Bay Cities Association Riverside County Transportation Commission
Provide maximum flexibility in the implementation of TCMs	City of Brea Western Riverside COG
More closely coordinate funding levels/availability and TCM implementation expectations	South Bay Cities Association Western Riverside COG
TCM and CMP/congestion relief implementation should be coordinated	City of Santa Clarita Western Riverside COG Arroyo Verdugo
Structure TCMs to facilitate tracking and monitoring	Western Riverside COG

In the summer of 1993, a joint SCAG/SCAQMD TCM Policy Committee was formed to consider this information, recommend TCM refinements and assist in development of implementation strategies in the SCAB with SCAG and the SCAQMD. The committee comprises elected officials from each of the subregions in the SCAB, the four-county transportation commissions, the SCAQMD, and SCAG. A companion TCM Technical Advisory Group (TAG) also includes representatives from business, environmental interests, and Commuter Transportation services to provide staff input to the Policy Committee. This committee structure replaced the TCM Working Group formerly established by the SCAQMD.

During the monthly meetings of the Policy Committee and the bi-weekly meetings of the TCM TAG, discussions have ranged from what the region can realistically expect from the implementation of TCMs to how technology can be advanced to provide significantly lower-emitting vehicles. Initial recommendations on TCM strategies to be included in the AQMP are anticipated in December 1993. This information will then be used by the SCAQMD to assess the level of emission reductions that would be required within the region overall to attain the ambient air quality standards.

When the RCP is adopted, draft TCMs are to be conveyed to the SCAQMD for inclusion in the draft 1994 AQMP. Finalization of the TCMs is scheduled for summer 1994 when SCAG adopts the local government measures and TCMs to be included in the AQMP. While it is anticipated that the breadth of strategies contained in the RME will be more comprehensive than the TCMs ultimately agreed upon, to the extent that the TCMs are more ambitious, the RME may need to be amended.

Several approaches to the identification, grouping and implementation of TCM strategies are being discussed. One proposal identifies six groupings of potential TCM actions (education, capital improvements, design standards, employer trip reduction measures, technology-based measures, and direct trip reduction strategies), notes potentially responsible parties, and begins to develop a legally enforceable implementation framework.

A second proposal focuses on the development of a single, holistic TCM in which each subregion would have a specific performance target. Implementation of the TCM strategy would rely on the formation of partnerships with regional, subregional, county, and local entities to identify regionally and locally appropriate TCM actions, as well as implement, monitor and administer the TCM program. Both approaches discuss the use of SCAQMD rule-making authority as a key legally enforceable mechanism.

Additional areas of discussion include how the CMP and TCMs can be more closely integrated into a single program that can be implemented by local governments. Integration of market incentive approaches to the implementation of TCMs, structuring of TCMs to encourage mobile source technological advancements, and delineating appropriate administrative and monitoring processes are also being addressed.

Overall, the Committee structure is intended to provide the maximum degree of flexibility in identifying which strategies and actions are believed to be the most appropriate for implementation for mobility and air quality purposes. This approach is also intended to recognize common interests of neighboring communities in preparing compatible options for TCM implementation, and be sensitive to important

differences in available infrastructure, transportation services, land uses, and travel patterns in a diverse region.

Regional Task Forces

In addition to the efforts for specific non-attainment areas, SCAG has formed two task forces composed of local elected officials—an Advanced Transportation Technologies Task Force and a Market Incentive Task Force. Each task force is charged with preparing options to be considered for the respective issue areas and making recommendations for inclusion in the RME.

RECOMMENDED TCM PROGRAM FOR THE SOUTH COAST AIR BASIN

While specific recommendations are forthcoming through the TCM Policy Committee process, initial indications are that the following areas will be emphasized in a comprehensive mobile source emission reduction strategy.

Technology: Provides innovative means to advance technological means of reducing vehicular emissions are likely to be an important cornerstone of the strategy.

Market-Incentives (MI)/Pricing: Such strategies could be used to either enhance/substitute for TCM actions. Market Incentives have the potential to also fund needed transportation improvements within the region beyond those funds currently identified as reasonably available. A more comprehensive discussion of such measures is contained in Chapter 4, TDM.

Mobility Improvements: Closer coordination and integration of air quality and congestion relief measures through the CMP and deficiency plan process is likely to be proposed. A single program that targets similar travel markets and serves both air quality and mobility purposes could hold promise. The role and stringency of regulatory actions will be further developed.

Non-Auto TCMs: In addition to efforts to achieve emission reductions from vehicles, the South Coast Air Basin has also included strategies to reduce emissions from planes and trains. The roles and specific responsibilities of various agencies involved in implementing these TCMs are still being debated.

- **Regional Railroad Emissions Control Measure:** The Railroad Emissions Control Measure from the 1989/91 South Coast Air Plan is being refined for the 1994 Ozone SIP Submittal. This measure is focuses on railroad operations in the South Coast Air Basin, including freight, commuter, and intercity passenger

trains. It could have implications on the surrounding air basin as well. The intent is to reduce oxides of nitrogen from diesel-electric locomotives.

Key concerns include: ensuring that adverse modal diversion from trains to trucks does not occur; the development of a comprehensive financing plan; and the provision of a backstop measure.

The decision process for establishing control methods needed to achieve a substantially greater reduction in 2010 emissions is as follows. A Regional Railroad Air Quality Emission Reduction Program has been established, with a Policy Board and five Standing Committees: the Locomotive Propulsion Systems, Finance, Legal, Consolidation, and Freight Movements Committees. In addition, an Emissions Reduction Target Subcommittee will finalize the emissions reduction target for 2010 (currently set at 90%).

The previous Railroad Emissions Measure called for Railroad Electrification. The current form of the measure is technology-neutral, and calls for one or a combination of the following strategies to be used to lower locomotive emissions: clean diesel, SCR, cleaner fuels such as LNG used by gas engines or dual-fuel engines, electrification, and/or new locomotive power plants such as fuel cells.

A series of studies and demonstration projects will be completed by the beginning of 1996, permitting comparisons between alternative control methods, including feasibility and time to commercialization, life-cycle costs, and funding/financial plans required for implementation. The Policy Board will refine the Railroad Emissions Reduction Measure as appropriate, by June 1996.

- **Aviation Transportation Control Measure:** The respective roles and responsibilities of the various agencies involved in implementing aviation Transportation Control Measures (TCM's) are still being debated. Currently, SCAG is developing ground access plans for all the air carrier airports, the SCAQMD is developing an indirect source rule that will be applied to these airports, and EPA is developing an airport control strategy pursuant to the Federal Implementation Plan (FIP). The exact division of responsibilities between these agencies in implementing aviation TCM's will be determined in the future.

RECOMMENDED MONITORING/PROGRAM EVALUATION METHODOLOGY

Monitoring of TCMs is important for three reasons. First, monitoring is a federal statutory requirement to ensure compliance with CAA and ISTEA. Second, monitoring can be used to assist with duplication of successful strategies for other jurisdictions by highlighting effective approaches and methods of implementation. Third, the implementation of standardized data collection methods for monitoring purposes will provide necessary information for the evaluation of mobile source emission reduction strategies' effectiveness.

Although the most appropriate types of monitoring programs will depend on the TCMs that are ultimately adopted, several methods are available to monitor and evaluate TCM strategies:

Regional Monitoring and Evaluation

Monitoring on a regional level can occur in two ways. First, overall indicators of travel demand, such as AVO, transit mode split, and non-motorized mode split can be monitored by periodic origin and destination surveys and by evaluating travel data gathered through the Census. Second, conformity reporting for the RTIP and the RME requires a current evaluation of local implementation efforts on a regionwide basis.

Subregional Reporting

Subregional organizations can serve as an important conduit for monitoring and evaluating demand management programs. Through this structure, local jurisdictions will be able to provide direction on the selection and implementation of appropriate monitoring mechanisms for their specific subregion. This structure could help to ensure consistency among local programs, permit comparisons of evaluation conclusions, and realize savings through the pooling of monitoring resources.

Coordination with CMP Monitoring

CMP statute requires that each county Congestion Management Agency (CMA) monitor local jurisdictions to determine if they are complying with CMP responsibilities. The CMP provides for a reporting process that should be closely integrated on the local level; each jurisdiction must ensure the implementation of TDM ordinance requirements.

Existing methods may be used for monitoring compliance with development standards. Common monitoring methods available to local jurisdictions include the following:

- Level of service (LOS) monitoring.

- Site monitoring prior to issuance of certificate of occupancy or business license.
- Other building site reports/surveys which the local jurisdiction may deem appropriate.
- CEQA mitigation monitoring.

The monitoring system used by CMAs can provide a useful tool allow an assessment of how local jurisdictions are implementing actions described in the various air quality attainment plans. Additionally, the CMP-required trip-reduction/TDM ordinances and subsequent analysis of land-use/transportation implications provide an opportunity to refine and focus the scope and funding of control measure programs implemented at both the county, subregional, and local levels. The implications for regional mobility are important, for monitoring can be used to assess the effectiveness of TCM programs and serve as a mechanism for assessing progress toward performance goals.

Relationship of Monitoring to the TCM Implementation Framework

A key issue in TCM development is how to address the implementation of TCM-based actions that do not meet a strict interpretation of each of the TCM criteria. While local governments have and can be expected to continue to implement actions (typically demand management and land-use-based strategies) that have positive air quality impacts. Yet, the existing TCM implementation framework often does not lend itself to quantifying the effects of these actions because they are neither easily quantified nor typically implemented through a strict trip reduction ordinance process.

One potential solution is to include such actions into "baseline" assumptions and monitor them to ensure that the assumed implementation levels do indeed occur. To provide for such an approach, efforts to develop a cooperative, iterative process to monitor, identify and initiate adjustments to a course of action are being explored and structured as a part of the TCM development processes in the region.

ADDITIONAL TCM CONSIDERATIONS

Federal Implementation Plans (FIPs)

The U.S. Environmental Protection Agency (EPA) is in the process of developing FIPs for both the SCAB and Ventura County in response to separate court cases. While more information will become available in February 1994 when formal rulemaking is proposed, the presence of FIP action serves as a significant backdrop for the development of the 1994 AQMPs—and, thus, the TCMs—in both Ventura and South Coast.

The FIP also presents an opportunity to address sources that are under federal jurisdiction. These include trains, planes, trucks, ships, and some off-road vehicles.

Several policy issues arise from the FIP. First, the proposed relationship between locally developed AQMPs and the FIPs for the respective areas is unclear; will the FIP build off (modularly) of the local AQMPs or allow locally developed measures to substitute for measures in the FIP? Second, have the options available to areas subject to the FIPs been clearly identified, particularly on the TCM strategy side, within the context of measures willing to be undertaken and have public acceptance for local action in a modular FIP versus those locally developed actions that could be supported for substitution for FIP actions?

Contingency Measures

Both the federal and state Clean Air Acts require that contingency measures be adopted in the event adopted control measures do not achieve interim goals or maintain adequate progress toward the attainment of standards. In the past, contingency measures have included TCMs and other strategies that were not considered to be feasible at the time of adoption of an attainment plan by the district boards and California ARB. Examples include increasing gas taxes, limits on vehicle registration, no-drive days and emission charges on vehicle use.

Another approach for consideration in the region is the use of pricing. This approach could include charging for emissions through various means (e.g., dirty fuels fees, emission-related mileage fees, congestion charges, parking fees), which, in turn, would reduce the type of travel behavior that produces emissions, or cause a shift in demand away from higher-emitting vehicles toward the use of lower-emitting vehicles. Such "market-based" measures would likely require legislative action to be made enforceable.

Transportation Control Measure Funding

Funding for TCMs is available through a variety of sources. Perhaps most important are two categories of ISTEA funding: Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement Program (CMAQ). Funding through STP is the most flexible, allowing funds to be spent on the National Highway System (NHS) as well as other components of the regional transportation network. An a subset of the STP funds—Transportation Enhancement Activity funds—are available to facilitate non-motorized forms of travel. CMAQ, on the other hand, was established specifically to fund projects that will contribute to the attainment of national ambient air quality standards. CMAQ funds are to be distributed based on formulae that give priority to ozone and carbon monoxide non-attainment areas.

In May, 1992, SCAG and the county transportation commissions agreed on a set of principles, which would guide the programming of STP and CMAQ funding, as shown in Table 11-5.

TABLE 11-5
EXISTING PRINCIPLES FOR PROGRAMMING OF
STP AND CMAQ FUNDS RELATED TO TCMs

- 1) Programming of STP and CMAQ funds shall be the primary responsibility of the respective county transportation commission, consistent with federal and state law, the RTP, and in conformance with the applicable Air Quality Management/Attainment Plan.
- 2) Implementation of TCMs required by the Air Quality Management/Attainment Plans, shall be a high priority for expenditure of all STP and CMAQ funds. Cities and counties are eligible to utilize the STP and CMAQ funds for demand management and growth management TCMs and will be so advised.
- 3) The county transportation commissions have the responsibility either directly or through an agreement to document the implementation of TCMs.

Funding for the implementation of specific types of TCM (e.g., transit, HOV lanes, rail construction, and traffic signalization) is available through a variety of state and local funding sources, including gas taxes, bonds, and local sales taxes. Additional funding sources include an increase in motor vehicle registration fees to \$4. Local jurisdictions have also relied upon local development, parking and permit fees to help provide for traffic mitigation strategies—many of which qualify as TCMs.

ISSUES IN NEED OF FURTHER STUDY

Several issues remain outstanding with regard to TCM strategy refinement, obtaining commitments and implementing TCMs. These are the following:

- How can subregional members receive credit for transportation-based actions that have positive air quality benefits, but do not meet each of the criteria required to be classified as a TCM?
- How can the programmatic framework for TCMs best be structured to sensitively address local constraints, capitalize on local opportunities and maximize flexibility of implementation while meeting state and federal requirements?
- How can TCM implementation best be coordinated to take advantage of efforts being undertaken in response to other mobility and air quality programs (e.g., congestion management programs, including deficiency plans and CEQA mitigation requirements)?
- How can appropriate performance levels best be established to serve as a guidepost that represents a level of ambition for TCM implementation beyond the status quo, yet are achievable without resorting to Draconian measures, which could adversely impact the economy?
- How can more cooperative and coordinated relationships between EPA, ARB, Caltrans, SCAG, air pollution control/management districts, county transportation commissions, and subregions be promoted to improve both air quality and comprehensive regional planning, as well as facilitate the implementation of trip and VMT reduction strategies within the region?
- How can funding for TCMs be expedited?
- How can market-incentive/pricing strategies best be developed and implemented to reduce and/or eliminate the need for TCMs and regulations?
- What types of locally supported programs can be developed in Ventura and the SCAB that could potentially serve to substitute for EPA FIP actions, particularly in the event that fees are proposed and the revenues generated are not returned to the region?

CHAPTER TWELVE: REGIONAL ACTION PROGRAM SUMMARY

INTRODUCTION

This chapter briefly describes the recommended actions of the Regional Mobility Element. The tables of this chapter contain the action elements from the other chapters. For a full discussion of the individual tables, please see the text appearing in the chapter covering the subject of the table. The action program includes the Congestion Management Programs (CMPs) from the five counties that were found to be consistent and comparable with the adopted plan. The CMPs contained the components to meet the highway, level of service, transit, and transportation demand management standards.

REGIONAL TRANSPORTATION DEMAND MANAGEMENT PROGRAM (TDM)

**TABLE 12-3
TDM: SHORT/LONG-RANGE
PROGRAM (7/20 YEAR PROGRAM)**

TDM STRATEGIES/PROGRAMS	SCHEDULE		POSSIBLE IMPLEMENTATION OPTIONS	
	7 YR	20 YR	Implementing Action	Implementor
Non-Commute Based Strategies - To Facilitate Use Of Alternative Modes				
Promote Access To And Within Activity Centers <ul style="list-style-type: none"> - Pedestrian Malls - Increase Bicycle/Pedestrian Facilities - Area-Wide Vanpool Program 	<ul style="list-style-type: none"> • • • 	<ul style="list-style-type: none"> • • 	<ul style="list-style-type: none"> - Circulation master plan - Station stops - Pedestrian overlay zones - Racks/lockers/showers 	<ul style="list-style-type: none"> - County transportation - Local government - Private developers - Private businesses
Land-Use Strategies	•	•	- Land-use	- Local government
TDM Demonstration Projects	•		- Regional/ local	- State,
Education and Promotion	•		- Regional/ local	- State, MPO, CTCs,
Commute-Based Strategies - To Facilitate Use Of Alternative Modes				

TDM STRATEGIES/PROGRAMS	SCHEDULE		POSSIBLE IMPLEMENTATION OPTIONS	
	7 YR	20 YR	Implementing Action	Implementor
Ridematching <ul style="list-style-type: none"> - Employee Rideshare - Matching Program - Employer Rideshare - Incentives 	•	•	<ul style="list-style-type: none"> - Reg XV, Rule 210, Rule 11 - Parking subsidies - Transit fees 	<ul style="list-style-type: none"> - Large employers - Small businesses - TMAs/TMOs - CTS
Ridesharing Support Facilities <ul style="list-style-type: none"> - HOV Lanes - Parking Management - Carpool Preferential - Parking 	• • •	•	<ul style="list-style-type: none"> - Federal & State funding - Parking management study - Preferential parking ordinance - Congestion pricing 	<ul style="list-style-type: none"> - Federal/State transportation agencies - Local government - TMAs/TMOs - CTS
Facilitate/Increase Transit Accessibility <ul style="list-style-type: none"> - Long Range Transit Improvements - Park-and-Ride Facilities 	• •	•	<ul style="list-style-type: none"> - Area-wide master plan - Integrated transit/feeder system - Mixed land-use 	<ul style="list-style-type: none"> - CALTRANS - CTCs - Local government
Telecommunications <ul style="list-style-type: none"> - Telecommuting Centers - Teleconferencing - Telecommuting - Teleservices 	•		<ul style="list-style-type: none"> - Employer supported programs - Upgrade fiber-optics network - Regional teleconferencing network 	<ul style="list-style-type: none"> - Local government - Developers - Large employers
Employer Trip Reduction Programs <ul style="list-style-type: none"> - Regulation-Based - Market Incentive-Based - Vanpool Incentives and Programs - Work-at-Home 	• • • • •	• • • •	<ul style="list-style-type: none"> - Reg XV, Rules 210 & 11 - Parking subsidies - Transit subsidies - Vanpool purchase incentives 	<ul style="list-style-type: none"> - Large employers - CTCs & CTS - TMAs/TMOs
Local TDM Ordinance <ul style="list-style-type: none"> - Trip Reduction - Auto Use Restrictions - Land-Use Strategies - Bicycle - Parking 	• • • • •	• • •	<ul style="list-style-type: none"> - Ordinances on a local and regional levels 	<ul style="list-style-type: none"> - Local & regional/subregional governments
Integration of TDM Measures into CEQA Mitigation Process	•		<ul style="list-style-type: none"> - By Airbasins - By subregions 	MPO <ul style="list-style-type: none"> - District - Subregions

TDM STRATEGIES/PROGRAMS	SCHEDULE		POSSIBLE IMPLEMENTATION OPTIONS	
	7 YR	20 YR	Implementing Action	Implementor
Facilitation of Non-Traditional Transit and Shuttle Services	•	•	Area-wide master plan by: - TMAs/TMOs - Communities neighborhoods	- Local governments' department of transportation - CTCs
Transportation Management Associations/ Organizations	•	•	- Create new - Increase membership and service - Coordinate in marketing efforts	- MPO - Local government
Provision of Bicycle/ Pedestrian Infrastructure - Lanes/Paths - Storage Facilities	•	•	Area-wide master plan - Design guidelines - Parking as a percentage of auto parking - On-site pedestrian walkways	- CTCs - Local government - Private developers
Alternative Work Schedules - Flextime - Modified Work Schedule	•		Region-wide programs	- Large employers, both public & private
TDM Demonstration Projects	•		- Locate funding sources - regular - innovative	- CALTRANS - CTCs - TMAs/TMOs
Park-and-Ride Lots	•		- Available land close to transit - Area-wide master plan	- CALTRANS CTCs
Market Based Strategies				
Direct Market Incentives	•		Area-wide programs	- Federal, State, and local agencies
Indirect Market Incentives	•	•	Area-wide programs	- Federal, State, and local agencies

REGIONAL TRANSIT (BUS AND RAIL) PROGRAM

TABLE 12-4(A)
SHORT RANGE PROGRAM

AGENCY(IES)	ACTIONS	DATE OF IMPLEMENTATION
LACTC/ SCRTD	Complete Metro Red Line between LAUPT and Alvarado and initiate service	1993
LACTC/ LACMTA	Complete Metro Red Line between Alvarado and Wilshire/Western and extend service to Western	1996
LACTC/ LACMTA	Complete Metro Red Line between Alvarado and Hollywood/Vine and initiate service between LAUPT and Hollywood	1999
LACTC/ LACMTA	Complete Metro Green Line from Norwalk to El Segundo and initiate service	1995
LACMTA	Build Metro Blue Line from LAUPT to Sierra Madre Villa in Pasadena and initiate service	1998
LACMTA	Initiate short line service on the Blue Line from 7th and Flower in Los Angeles to Willow Street in North Long Beach	2000
LACMTA	Initiate short line service on the Blue Line from LAUPT to Del Mar in the Pasadena CBD	2000
SCRRA	Implement LA-Moorpark Metrolink line	1993
SCRRA	Implement LA-Santa Clarita Metrolink line	1993
SCRRA	Implement LA-San Bernardino Metrolink line	1993
SCRRA	Implement LA-Riverside Metrolink line via UP/Ontario	1993
SCRRA	Extend LA-San Juan Capistrano commute service to Oceanside and expand service with additional trains	1993

AGENCY(IES)	ACTIONS	DATE OF IMPLEMENTATION
SCRRA	Implement LA-Riverside Metrolink line via ATSF/Fullerton	1994
SCRRA	Implement San Bernardino/Riverside to Fullerton/Irvine Metrolink line	1995
SCRRA	Implement San Bernardino-Redlands Metrolink line	1995
SCRRA	Implement Riverside-Hemet Metrolink line	1996
SCRRA	Extend LA-Santa Clarita Metrolink line to Palmdale	1996
Lossan RCA, SCRRA, Caltrans, SANDAG, MTDB, NSDTDB	Continue Lossan Corridor improvement program, including track replacement, and track, signaling, grade crossing, and station improvements	1995
Caltrans, Amtrak	Add a ninth and tenth San Diegan round trip and acquire additional passenger cars to increase capacity of existing trains	1995
Lossan RCA, SCRRA, Caltrans, LACTC, VCTC	Implement necessary track, signaling, grade crossing, and station improvements on the Southwest Corridor extension from LAUPT to Santa Barbara	1995
Caltrans, Amtrak	Add a third and a fourth San Diegan round trip from LAUPT to Santa Barbara	1995
Caltrans	Provide additional intercity station stops between LAUPT and Goleta	1995
SCRRA	Add reverse-peak and mid-day Metrolink service on LA to San Bernardino, Santa Clarita, and Moorpark lines	1993
LACMTA, OCTA, VCTC, SanBAG, RCTC, transit providers	Maintain existing bus services and operations	1993-2000

TABLE 12-4(B)
LONG RANGE BUS AND RAIL PROGRAM:

AGENCY(IES)	ACTIONS	DATE OF IMPLEMENTATION
LACMTA	Extend Metro Red Line from LAUPT to Boyle Heights	2001
LACMTA	Extend Metro Red Line from Wilshire/Western to Pico/San Vicente	2001
LACMTA	Extend Metro Red Line from Hollywood/Vine to North Hollywood	2001
LACMTA	Extend Metro Red Line from North Hollywood to Sepulveda and initiate a third Metro Rail service from LAUPT to Sepulveda	2002
LACMTA	Extend Metro Red Line from Boyle Heights to I-5/Atlantic	2009
LACMTA	Extend Metro Red Line from Pico/San Vicente to Century City	2009
LACMTA	Build Metro Green Line extension from I-105 alignment to Westchester, and operate a second route from Norwalk to Westchester	2010
LACMTA	Extend the Metro Green Line south to Torrance	2010
LACMTA	Extend the Metro Green Line east to the Norwalk Metrolink station on the Lossan Corridor	2010
LACMTA	Complete Blue Line connector in LA CBD and initiate through service from Long Beach to East Pasadena	2006
LACMTA	Extend the Pasadena light rail line east to Azusa	2010
LACMTA	Construct the Glendale light rail line to North Glendale	2010
LACMTA	Construct the Exposition light rail line to Santa Monica	2010
LACMTA, OCTA, VCTC, SanBAG, RCTC, transit providers	Maintain existing bus services and operations	2001-2010

RECOMMENDED REGIONAL STREETS AND HIGHWAYS PROGRAM

Table 12-5(A) shows the breakdown of total mixed-flow and HOV lane mileage by location.

TABLE 12-5(A)
TOTAL MIXED-FLOW & HOV LANE
MILES ADDED BY COUNTY 1990 - 2010

County	Total Added Lane Miles by County	Mixed-Flow Lane Miles	% of Total	HOV Lane Miles	% of Total
Imperial	137	137	100	0	0
Los Angeles	1,031	223	22	808	78
Orange	800	601	75	199	25
Riverside	327	212	65	115	35
San Bernardino	390	269	69	121	31
Ventura	85	85	100	0	0
Total	2,770	1,527	55	1,243	45

Source: 1993 RME Constrained Project 1990 - 2010

Note: Includes new facilities, widening of existing facilities and toll roads.

Expansions due to new facility construction and widening of existing facilities. Table 12-6(B) shows the breakdown of capacity expansions by improvement type.

TABLE 12-5(B)
PROPOSED CAPACITY EXPANSIONS BY IMPROVEMENT
TYPE 1990 -2010

County	Mixed-Flow (lane miles)			HOV (lane miles)		
	Construction of New Facilities	Additions to Existing Facilities	Total	Construction of New Facilities	Additions to Existing Facilities	Total
Imperial	34	103	137	0	0	0
Los Angeles	28	195	223	28	780	808
Orange	466	135	601	146	53	199
Riverside	0	212	212	0	115	115
San Bernardino	184	85	269	62	59	121
Ventura	9	76	85	0	0	0
Total	721	806	1527	236	1007	1243

Source: 1993 RME Constrained Project

Long-range Freeway-Based HOV Expansion -- HOV expansion is recommended on portions of the Interstates 5, 10, 15, 215, and Route 101 beyond 2010.

Transportation System Management

System management improvements such as freeway ramp metering, installation of changeable message signs, and construction of park-and-ride lots along transit corridors are recommended.

Local Streets and Roads Improvements

The projects that specifically pertain to the local streets and roadways in the CMP CIPs are recommended as the local streets and roads improvements. *Table 12-5(C)* is a summary of the seven-year CIP projects of the 1992 CMPs by the type of improvements as related to both regional highways and streets, and to local streets only.

TABLE 12-5(C)
SUMMARY OF CMP CIP PROJECTS

COUNTY	TYPE OF IMPROVEMENT	COST OF IMPROVEMENT (million dollars)	
		Highways and Local Streets	Local Streets Only
LOS ANGELES	Capacity Enhancement	178.0	8.9
	System Management	68.6	7.8
	Other	44.1	0.0
ORANGE	Capacity Enhancement	712.2	700.9
	System Management	511.4	260.3
	Other	31.0	31.0
RIVERSIDE	Capacity Enhancement	36.2	6.0
	System Management	23.1	3.8
	Other	12.0	7.6
SAN BERNARDINO	Capacity Enhancement	1,682.7	278.7
	System Management	621.2	522.2
	Other	90.0	86.1
VENTURA	Capacity Enhancement	57.0	6.0
	System Management	249.5	3.8
	Other	0.0	7.6
SUB-TOTAL	Capacity Enhancement	2,666.0	1,000.5
	System Management	1,474.0	797.9
	Other	177.0	132.3
TOTAL		\$4,317.0	\$1,930.7

Sources: 1. San Bernardino Association of Governments, Congestion Management Program for San Bernardino County, November 1992
 2. Los Angeles County Metropolitan Transportation Authority, Congestion Management Program for Los Angeles County, December 1992
 3. Riverside County Transportation Commission, Congestion Management Program for Riverside County, December 1992
 4. Orange County Transportation Authority, Congestion Management Program for Orange County, December 1992
 5. Ventura County Transportation Commission, Congestion Management Program for Ventura County, December 1992

Arterial HOV Candidate Corridors

Nine potential arterial HOV candidate corridors have been identified for the purposes of modeling and to determine their potential in achieving mobility objectives.

1. Olive Street: from Olympic Boulevard to Fourth Street.
2. Hill Street: from Olympic Boulevard to Temple Street.
3. Broadway: from Olympic Boulevard to Temple Street.
4. Vermont Avenue: from Exposition to Santa Monica Boulevard.
5. Santa Monica Boulevard: from Sepulveda to Century City.
6. Century Boulevard: from Interstate 405 to LAX.
7. La Tijera/Sepulveda Boulevards: from Interstate 405 to LAX.
8. Colorado Boulevard: through Eagle Rock (Tri-Cities Corridor).
9. In corridors that access Metrorail stations where high volumes of buses occur (Alvarado Street, Ventura Boulevard, etc.).

POTENTIAL SMART CORRIDORS

Los Angeles and Orange County potential Smart Streets Corridors are identified for the purpose of providing cost effective methods in reducing congestion.

TABLE 12-5(D)
LOS ANGELES COUNTY
POTENTIAL SMART STREET CORRIDORS

ROUTE	DESCRIPTION
Downtown L.A. Ring	I-5, I-10, 101, & I-110
5	Between I-605 & Rte. 60
5	Between Rte 110 & Rte. 134
10	Between I-5 and I-605
60	Between I-5 & I-605
60	Between I-605 and Rte. 71
91	Between I-10 & Beach Blvd.
101	Between I-110 & Rte. 134
101	Between Valley Circle Blvd & I-5
110	Between I-405 & I-10
210	Between Rte. 134 & Rte. 30
405	Between I-605 & I-110
405	Between I-110 & I-10
405	Between I-10 & 101
405	Between 101 & I-5
605	Between I-405 & I-5
605	Between I-5 & I-10

Source: Statewide Smart Corridor Study

TABLE 12-5(E)
ORANGE COUNTY
POTENTIAL SMART STREET CORRIDORS

ROUTE	DESCRIPTION
22	I-405 to Rte. 55
55	I-405 to Rte. 91
57	I-5 to Rte. 90
91	Rte. 91 Imperial Hwy to Beach Blvd.
405	Rte. 22 to I-5

Source: Statewide Smart Corridor Study

Safety and Accident/Incident Management

Caltrans, the county transportation commissions and the California Highway Patrol (CHP) currently employ various incident management programs. Mechanisms that allow for recovering the costs of incident/accident clean-up through incentive fees should also be examined. A study should be done to quantify and evaluate the impacts of accidents and incidents on the region's roadways. Mechanisms that address the accident/incident cost recovery should be investigated for possible implementation.

REGIONAL NON-MOTORIZED TRANSPORTATION PROGRAM

TABLE 12-6
RECOMMENDED ACTION PROGRAM

NMT STRATEGIES/ACTIONS	SCHEDULE		POSSIBLE IMPLEMENTATION OPTIONS	
	7 YR	20 YR	Implementing Action	Implementor
IMPROVED INFRASTRUCTURE				
BICYCLE AND PEDESTRIAN PATHWAYS AND AREAS e.g., <ul style="list-style-type: none"> - Class I, II, III Bicycle Facilities - Sidewalks and Pathways - Bicycle and Pedestrian Bridge Access 	●	●	<ul style="list-style-type: none"> - Circulation Element - Zoning Ordinances - Exactions/ Developer fees - CMP TDM Program - ISTE A Transportation Enhancement Activities 	<ul style="list-style-type: none"> - Local Government - Local CTC - State (Caltrans, Parks Department) - Private Developer
BICYCLE AND PEDESTRIAN PATHWAY AMENITIES e.g., <ul style="list-style-type: none"> - Lighting - Maintenance of Pathways (i.e., Removing debris, overhanging plants, etc.) - Bicycle and Pedestrian-Friendly Rail Road Crossings 	●	●	<ul style="list-style-type: none"> - Pedestrian Overlay Zone - Exactions/ Developer fees - Zoning Ordinances 	<ul style="list-style-type: none"> - Local Government - Local CTC - Private Developer
BICYCLE- AND PEDESTRIAN-FRIENDLY STREET ENGINEERING e.g., <ul style="list-style-type: none"> - Audible Street Crossing Signals - Bicycle Sensitive Loop Detectors - Bicycle-Friendly Gutter Grates 	●	●	<ul style="list-style-type: none"> - Bicycle Plans - Pedestrian Programs 	<ul style="list-style-type: none"> - Local Government
BICYCLE RACKS AND LOCKERS e.g., <ul style="list-style-type: none"> - Bicycle Racks/Lockers at Activity Areas, Recreational Areas, Schools, Government Buildings, Transit Stops and Stations 	●	●	<ul style="list-style-type: none"> - Local Government Ordinance - CMP TDM Bicycle Locker Program - ISTE A Transportation Enhancement Activities Program 	<ul style="list-style-type: none"> - Local Government - Local CTC - Private Developer - Caltrans

NMT STRATEGIES/ACTIONS	SCHEDULE		POSSIBLE IMPLEMENTATION OPTIONS	
	7 YR	20 YR	Implementing Action	Implementor
BICYCLE AND PEDESTRIAN ACCESS TO TRANSIT e.g., <ul style="list-style-type: none"> - Bus Shelters and Benches at Stops - Paved Access to and at Transit Stops - Equipment for Bicycles on Bus 		•	<ul style="list-style-type: none"> - Developer Fees/Exactions - ISTEA Transportation Enhancement Activities 	<ul style="list-style-type: none"> - Transit Operator - Local Government - Local CTCs - Private Developer
PROMOTION/EDUCATION				
EMPLOYER BICYCLE COMMUTE PROGRAM e.g., <ul style="list-style-type: none"> - Showers and Lockers for Bicyclists and Pedestrians - Loan Program for Purchasing Bicycles and Bicycle Equipment 	•		<ul style="list-style-type: none"> - Regulation XV program - CMP TDM Program - Local Govt. Trip Reduction Ordinance 	<ul style="list-style-type: none"> - Local Government - Local CTC - Employer - TMA - Bicycle Organization
PROMOTIONAL EFFORTS e.g., <ul style="list-style-type: none"> - Bicycle or Pedestrian Events - Maps/Brochures 			<ul style="list-style-type: none"> - Promotional Programs - Trip Reduction Programs 	<ul style="list-style-type: none"> - Local Government - Local CTC - MPO - Air District - Caltrans - Bicycle Organization - TMA
SAFETY TRAINING PROGRAM e.g., <ul style="list-style-type: none"> - Riding Skills - Riding, Walking and Transit Awareness for Children - Bicycle Maintenance and Equipment Usage 	•	•	<ul style="list-style-type: none"> - County-wide Bicycle/Safety Education Program 	<ul style="list-style-type: none"> - Elementary to High School - Local CTC - Bicycle Organization
RESEARCH/DATA COLLECTION AND DEMONSTRATION PROJECTS	•	•	<ul style="list-style-type: none"> - CMP TDM Program 	<ul style="list-style-type: none"> - Local CTC - SCAG
MOTORIST TRAINING (Awareness of Bicyclists and Pedestrians and their rights)	•		<ul style="list-style-type: none"> - SCAG and Bicycle Organizations work with DMV to enhance motorist awareness 	<ul style="list-style-type: none"> - DMV
ENFORCEMENT				

NMT STRATEGIES/ACTIONS	SCHEDULE		POSSIBLE IMPLEMENTATION OPTIONS	
	7 YR	20 YR	Implementing Action	Implementor
Increased Enforcement of Traffic Laws Protecting Bicyclists and Pedestrians	•		- Increased Bicycle, Foot Patrols	- Local Govt., School and University Police Dept. - MTA Transit Police
LAND USE/SITE DESIGNS				
INCORPORATE BICYCLE AND PEDESTRIAN FRIENDLY DESIGN AND ACCESS FEATURES IN LAND USE AND SITE DESIGN REQUIREMENTS e.g., <ul style="list-style-type: none"> - Bicycle Parking Requirements - Sidewalk Requirements - Shower and Locker Requirements 	•	•	- General Plans - Zoning Ordinances	- Local Government

REGIONAL GOODS MOVEMENT ACTION PROGRAM¹

TABLE 12-7(A)
SHORT-RANGE GOODS MOVEMENT ACTION PROGRAMS

AGENCY(IES)	ACTIONS	DATE OF IMPLEMENTATION
Port of Los Angeles	Improvements in Berths 227-230, 212-215, 200, 174-181, 161, 142-147, 127-131	1994-1996
	Piers 300, 400, and Pier J extension	
	Yards--Brighton Beach, A Street	
	Terminal Island Container Facility	
	Access improvements--B Street realignment, Badger Avenue bridge	
Port of Long Beach	On-Dock Rail facility--Maersk Pacific Ltd	1993
	Grade Separations--Anaheim Street, Pico Avenue, Harbor Plaza, Pier G, Pier J	1994-1996
	Access--Pico Avenue realignment, I-710 connectors, Ocean Blvd. resurfacing and widening, Desmond Bridge widening	1995-1996
	Double tracking the Harbor lead track	1996
Port of Hueneme	Refrigerated terminal	1993/1994

¹ Passage of the ISTEA of 1991 resulted in the funding for projects benefitting goods movement activities in the SCAG region. These projects are funded out of Urban Access and Mobility, Innovative, and Intermodal categories, and have been incorporated by reference into the 1993 RME.

AGENCY(IES)	ACTIONS	DATE OF IMPLEMENTATION
Caltrans	Continue the real-time freeway conditions information system and expand the system to include a real-time continuous traffic information broadcast system to alert commercial vehicles of traffic congestion locations, accidents, etc.	1995
Caltrans, Port of Hueneme, Local Government	Extension of Rice Road to increase access to the port.	1994
Caltrans, Trucking industry	Develop computerized navigation and dispatching systems.	1995
Trucking industry, local governments	Increased night time shipping	1995
LAX	Redevelopment of existing cargo sites	1994
Ontario Airport (LA Dept. of Airports)	Construction of additional warehouse space	1995
Ontario Airport	Cargo facility expansion	1995
SCAG,	Study the future role of air cargo in the regional economy	1994-1995
Caltrans, Trucking Industry	Conduct a study to examine the feasibility of a pricing system to reduce accidents and associated congestion on the freeways	1995
SCAG, Railroads	Evaluate the congestion and air quality impacts of queued traffic at the 3000+ at-grade crossings in the region	1995
SCAG, Railroads	Study the economic feasibility of the phased elimination of at-grade crossings at high traffic flow arterials	1995
SCAG	Conduct the Railroad Consolidation Study	1994

AGENCY(IES)	ACTIONS	DATE OF IMPLEMENTATION
SCAG	Complete the Intermodal Goods Movement Study	1995
SCAG, SANDAG	Study the impacts of air cargo from San Diego and Northern Mexico on SCAG region roads and airports	1994
Caltrans, local governments, trucking industry	Encourage voluntary reductions in peak period travel by large trucks	1996
Caltrans, local governments	Prioritize system connectivity and gap closure projects	1995

TABLE 12-7(B)
LONG-RANGE GOODS MOVEMENT PROGRAMS

Agency(ies)	Actions	Date of Implementation
Port of Long Beach	On-dock rail facilities—California United Terminal, Hanjin Container Terminal, Pacific Container Terminal, Sealand Services, Inc.	2010
Ports of Long Beach and Los Angeles	2020 Plan	2020
Port of Los Angeles	Pier 300	2010
ACTA	Completion of the Alameda Corridor	2000
Local governments	Incorporate parking and off-street delivery areas and other needs of goods movement in land use planning	2000
SCAG, Airports, FAA, local governments	Examine the feasibility of converting abandoned military facilities for air cargo handling	2000

REGIONAL AVIATION SYSTEM PROGRAM

TABLE 12-8(A)
SHORT RANGE AVIATION PROGRAM

AGENCY(IES)	ACTIONS	DATE OF IMPLEMENTATION
SCAG	Complete Commercial Airport Capacity Study and the Military Airbase Contingency Study.	1993
SCAG	Complete NAWS Point Mugu Joint-Use Feasibility Study	1994
SCAG/AUWG	Complete airspace analysis of LA Basin	1993-1994
SCAG/FAA	Include major airport projects in the RME RTIP and make air quality conformity finding. At present, this includes the Burbank terminal relocation all airport projects.	1993-1994
Local Government/ Military/FAA	Develop commercial capacity at joint-use military airbases and closed military airbases.	1994-2000
SCAG/Local Government	Conduct airport ground access studies and modelling in conformance with the State law.	1993-1996
CALTRANS	Implement transportation infrastructure projects as contained in the SCAG RTIP and the State STIP.	1993-1999
SCAG/ SANDAG	Conduct study of impacts of air cargo generated from San Diego and northern Mexico on SCAG region airports and highway networks.	1994-1995
SCAG	Conduct General Aviation System Study	1993-1994
SCAG	Conduct studies to develop Aviation Strategic Element	1994-1997

TABLE 12-8(B)
LONG RANGE AVIATION PROGRAM

AGENCY(IES)	ACTIONS	DATE OF IMPLEMENTATION
Local Government	Implement capacity enhancements at existing commercial airports and mitigate impacts.	2001-2010

AGENCY(IES)	ACTIONS	DATE OF IMPLEMENTATION
Local Government	Implement commercial capacity at joint-use and closed military airbases	2001-2010
CALTRANS/ Local Government	Implement multi-modal and inter-modal airport ground access improvement at commercial and joint-use airports.	2001-2010

LONG RANGE CORRIDORS

TABLE 12-9(A)
SHORT RANGE:

AGENCY(IES)	ACTIONS	DATE OF IMPLEMENTATION
SCAG	Complete Inland Empire Long Range Corridor Study	Fall 1993

TABLE 12-9(B)
LONG RANGE:

AGENCY(IES)	ACTIONS	DATE OF IMPLEMENTATION
SCAG	Complete post 2010 corridor study	2002

CHAPTER THIRTEEN: SOCIOECONOMIC IMPLICATIONS

INTRODUCTION

The Southern California Association of Governments (SCAG) is required by federal law to evaluate and analyze regional effects of transportation decisions. Specifically, the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 directs SCAG as the Metropolitan Planning Organization (MPO) to examine social and economic effects of regional transportation decisions.

Various other federal legislation such as Title VI of the 1964 Civil Rights Act and the 1990 Americans with Disabilities Act (ADA), require that no person shall be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

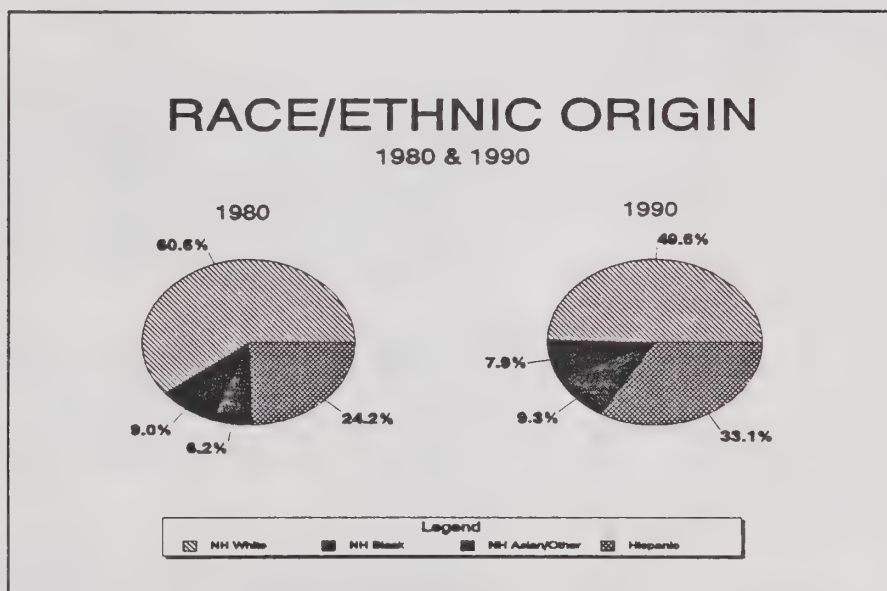
Quality of life for all people in the SCAG region, and particularly for the elderly, the disabled, the low-income, and other disadvantaged people is integrally linked to successful implementation of the region's transportation system.

Consistent with federal legislation, a primary goal of the 1993 Regional Mobility Element (RME) is to make the region accessible to everyone. This chapter will analyze how and to what degree regional mobility goals are impacting disadvantaged and low-income populations.

POPULATION AND TRIP CHARACTERISTICS

Approximately 15 million people currently live in the SCAG region. SCAG's forecast indicates this number will rise to 20.5 million by the year 2010. The majority of the population is now composed of ethnic minorities. (*see* Figure 13-1) These demographic trends will continue beyond the 2010 planning period.

FIGURE 13-1



Source: 1980 and 1990 U.S. Census Data

SELECTED MOBILITY TRENDS

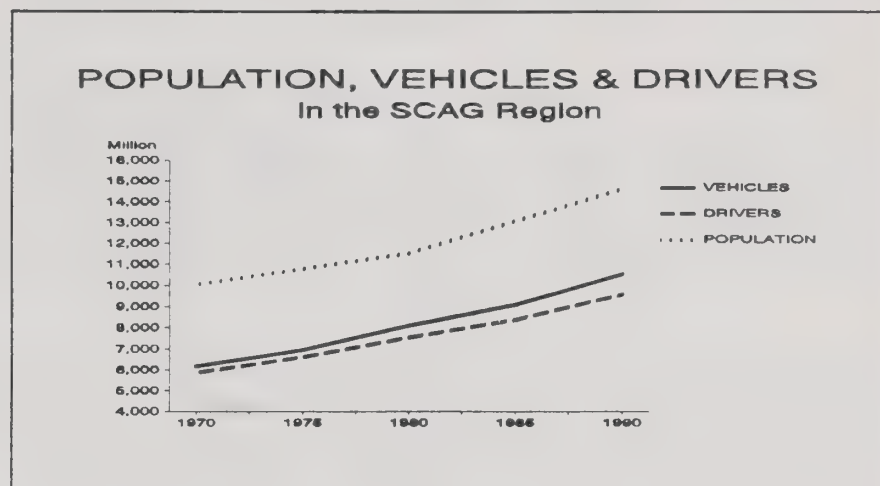
The 15 million people in the SCAG region own 10 million motor vehicles (see Figure 13-2). Paradoxically, but not unexpectedly, over the years, growth in automobile ownership has given rise to increased peak-hour traffic congestion and significantly degraded mobility for the region.

Between 1970 and 1990 the number of licensed drivers in the region increased from 6 million to 9.5 million, a 58 percent increase. People aged 65 or older have increased their share of licensed drivers by 130 percent. For the future, the number of licensed drivers will increase with the 5-to-17 age group as well as with the "baby boomers" (35-44 age group).

People who have purchased cars and/or secured drivers licenses can be expected to be a population largely or frequently dependent on automobiles for mobility.

Non-work trips represent 77 percent of the region's daily trip total. Even during the peak period, non-work trips account for 68 percent of all trips.

FIGURE 13-2

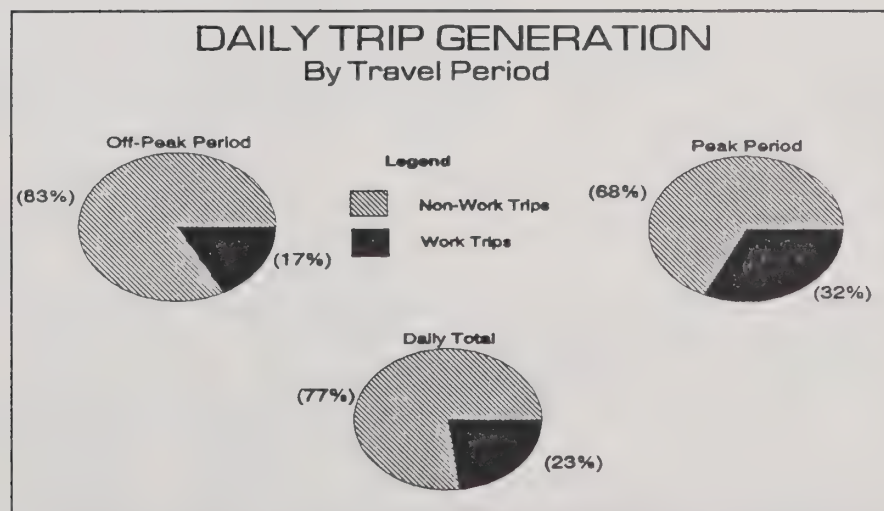


Source: State of California, Dept. of Motor Vehicles. U.S. Census Bureau

Non-work trips comprise three categories: family and personal business trips, social and recreational trips, and shopping trips.

The average travel times for work and non-work trips were 22 and 14 minutes, respectively.

FIGURE 13-3



Source: 1990 NPTS (Los Angeles, Anaheim, Riverside CMSA; represents all counties in SCAG Region except Imperial)

DISADVANTAGED AND LOW-INCOME POPULATIONS

Overview

For most people, a transportation problem may be a work trip that is too long or too congested. But for disadvantaged populations, the problem can be the inability to find employment because timely and reliable public transit is not readily available. This section will identify the mode of travel most used by the specified populations.

Elderly

According to the 1990 Census, approximately 1.4 million elderly (those people aged 65 and over) live in the SCAG region. Seniors make up 9.5 percent of the region's population and will grow another 54 percent by the year 2010.

A variety of social and demographic changes will accompany the aging of the population. People will live longer so the need for specialized care and other services will increase. These demographic changes will also raise significant questions about accessible transportation to meet the mobility needs of the elderly.

The majority of trips made by the elderly are not into or out of the Central Business District (CBD) but rather between two suburban locations. Transit systems that serve the suburbs generally carry passengers toward the central city and not to other suburban locations where medical and social services may be located. Consequently, more than 90 percent of trips made by the elderly, nationwide, are made by automobile, and reliance on the private vehicle is growing. The elderly drive fewer miles than do the rest of the population, but their mileage will likely increase in the future for the following reasons:

- Based on Department of Motor Vehicles data, the number and proportion of the elderly holding driver's licenses has been increasing for the past 10 years. During this period elderly people with driver's licenses have increased 56 percent.
- Most of the elderly live in urban areas, but their numbers in the low-density suburbs where reliance on the automobile is both a convenience and a necessity, is increasing.

The elderly face a number of obstacles that discourage mode shift from automobile dependency. First is the very serious concern of the elderly with personal security. Real or imagined, these fears have a great impact on transportation decisions made by elderly people.

Additionally, studies have shown that most of the elderly cannot easily change their current car trips into walking trips because trip destination are widely scattered throughout a community. However, these same

studies show that mass transit could effectively be substituted for some automobile trips if transit services were conveniently available within four blocks of a seniors residence.

Disabled

In 1990, 802,331 disabled people with a mobility limitation lived in the region. Of the total disabled population, 28 percent were elderly. As the disabled population parallels increases in the elderly population, there will be new demands for special transportation services that are easily accessible, reliable, and more importantly—affordable.

The case for specialized service for the disabled rests on three points. First, not every community, urban or rural, has local public transit service. Second, public transportation is still largely designed to accommodate home-to-work trips but trips by the disabled tend to be non-work related. Further, a substantial number of non-work trips are made in off-peak hours (*see* Figure 13-3) when there are fewer buses on the road and schedules are different. Third, in bad weather passengers in wheelchairs have difficulty maneuvering from home to inconveniently located bus stops, which may not have shelters.

The mode choice for disabled people depends on the severity of their disability. People who are visually impaired and people who have minor physical disabilities are oriented toward the regular bus and automobile-passenger modes in terms of preference and use. This group travels more frequently and for more purposes (i.e., medical trips, shopping, personal pleasure trips).

People with severe physical disabilities are oriented toward para-transit or demand-responsive service, which offer door-to-door service, assistance on and off the vehicle, convenience, comfort, and more personalized service.

Women

According to the 1990 Census, there were 7.3 million women in the SCAG region, accounting for 50 percent of the region's population. Five percent of the total female population were female-headed households with children under the age of 17.

Nationwide, according to the 1990 National Personal Travel Survey (NPTS), from 1983 to 1990, travel by women increased greatly, from 6,382 annual miles per female driver in 1983 to 9,528 miles in 1990—a 49 percentage change. This increase was due, partially, to the increase in women joining the work force.

The number of trips taken by women for family and personal business also grew by 37 percent for the same period.

For the expanding population of working mothers, the location of child-care facilities plays a major role in the transportation mode women choose. If a child-care facility is beyond walking distance of the home, it is very likely that an auto, if available, will be used to drive the child to the care facility. It follows that the balance of the commute trip will be by car as well.

In the case of older children, school location relative to home or work site can also impact the mode choice of a working parent. This is particularly the case where schools are not within walking distance or are not serviced by a school bus or public transportation.

As with seniors, safety and concern for personal bodily harm are another major factor in the choice of a transportation mode. Specific times, places, and even modes of transportation may be considered off-limits by women for fear of personal violence.

Youth

Approximately 2.6 million school-age (ages 5-17) children live in the SCAG region.

In the Los Angeles Unified School District alone (which represents the Los Angeles City and 16 other cities and communities), there are approximately 641,000 children enrolled in school for kindergarten through the 12th grade. Approximately 13 percent or 80,000 students take district-owned or contracted school buses and 11,000 take public transportation to school. This would mean that approximately 85 percent of the youth either walk to school, are driven by parents, or are driving themselves.

Low-Income Households

The 1990 Census defines poverty as a family of four with an annual income of less than \$12,674. In 1989, there were 1.9 million people below the poverty level in the SCAG region. This was a 40 percent increase over 1979.

Hispanics comprise one-third of the region's population and more than half of the Hispanic population have incomes below the poverty line. The African-American population, which constitutes 8 percent of the region's population, makes up 13 percent of the region's low-income families.

Although it would seem that workers in low-income households would tend to rely more heavily on transit or carpooling, nationally, this is not the case. Data from the 1990 NPTS shows a substantial shift away from transit for work purposes by populations in poverty.

According to the NPTS, approximately 60 percent of the low-income wage earners drive to work. This group also spends a great deal of time commuting between home and work.

On a regional level, travel patterns examined for South-Central Los Angeles, where approximately 35 percent of the area population are African-American and 60 percent are Hispanic, 23 percent use transit. The remaining 65 percent use the automobile for the work commute.

In another local example consistent with national trends, the Pico-Union District in Los Angeles, which is approximately an 8-square-mile community predominately populated by Hispanics (65 percent), 27 percent of the Hispanic population used public transportation to commute to work. Forty percent of the total households in this community were households without autos.

CHAPTER FOURTEEN: URBAN FORM AND MOBILITY

INTRODUCTION

Throughout the years, development in the SCAG region has been dispersed along the available freeway network. Traditional zoning laws that separate residential, commercial, and industrial land uses, have led to the spatial disconnection among different types of activities. These factors, among others, foster the ever-increasing dependence on the automobile as the main mode of transportation.

The 1991 federal Intermodal Surface Transportation Efficiency Act (ISTEA) stresses the integration of land-use policies and transportation programs. The legislation provides funding for transportation programs that are consistent with short- and long-range land use planning and puts new emphasis on transit, pedestrian, and bicycle facilities.

BACKGROUND

The jobs/housing balance policy proposed in the 1989 Growth Management Plan (GMP) was included in the 1989 Regional Mobility Plan (RMP) as a strategy to regain 1984 mobility levels. The aim of this land-use strategy was to relieve the pressures of population and job growth on the transportation system by achieving more balanced future developments, and thus, reducing increases in Vehicle Miles Traveled (VMT) resulting from new development. It should be recognized that phasing and timing of development are as important as achieving the proper jobs/housing balance to yield the desired transportation and environmental benefits.

Jobs/housing balance, as a Transportation Control Measure (TCM), has been riddled with implementation difficulties, and has been the subject of an ongoing regional debate. Nevertheless, the promotion of land-use development patterns, including jobs/housing balance, that enhance the efficiency of the transportation system remains an important goal of the Growth Management and Mobility elements.

LAND USE AND TRANSPORTATION ANALYSIS

SCAG commissioned a team of consultants, lead by the Urban Innovations Group, to investigate different theoretical urban form alternatives relative to regional mobility and air quality objectives. The team identified three cases of transit-oriented Urban Form and created a model for each case to estimate the modal split for transit.

The analytical method consists of the following steps: 1) Estimate how many workers live in transit-oriented zone in 2010. 2) Estimate how

many of these workers also have a job in a transit-oriented zone. 3) Estimate how many of these workers who both live and work in transit-oriented zone choose to use transit. 4) Add baseline transit use for those outside transit-oriented zones. 5) Compare to modal split goal necessary to achieve mobility and air quality goals.¹

The first case (Case A—Rail Station Concentrated Growth and Rail Emphasis) directs growth to occur in concentrated development within walking distance of existing and planned rail stations. The second case (Case B—Activity Center Concentrated Growth, and Rail and Express Bus Emphasis) directs growth to occur in concentrated development within walking distance of rail stations and in existing activity centers serviced by intra-center shuttles with express bus routes to other centers. The third case (Case C—Trendline Growth and Rail, Express Bus and Paratransit) implies trendline distributions of population and employment, and relies on a demand-responsive three-tiered transit system capable of servicing a large market.

Analytical results show that, for each of the three cases, modal split for transit in the home-to-work travel market increases compared to trendline projections. However, concentrated growth by itself does not produce the modal split goal of 19 percent, by 2010, for all home-to-work trips established by the 1989 RMP.

The estimated modal split for Case A falls in the 5-to-7 percent range and for case B in the 7-to-10 percent range. Case C yields an estimated modal split in the 15-to-25 percent range. This suggests that a multi-tiered transit system including intra-regional rail (e.g., Metrolink), inter-urban bus service, and an intra-urban Smart Shuttle Transit, has significant beneficial effects on mobility and air quality. This demand-responsive multi-occupant vehicle transportation system, and fine tuning multiple use neighborhood development, will retard private vehicle usage. The Smart Shuttle Transit is also beneficial in the non-home-to-work market, can reduce public expenditures and can create sustainable employment and economic development opportunities. In addition, a preliminary cost estimate revealed that the combined capital and operating costs were competitive in comparison to intra-urban rail transit.

Study conclusions emphasize the importance of land-use decisions that complement proposed investments in the Metropolitan Transportation System (MTS). Concentrated development and mixing land uses throughout the region to increase proximity of housing to employment opportunities, recreation, goods and services, will increase pedestrian and bicycle access and potentially result in VMT reduction due to local trip

¹ For more detailed information on methodology and results of the Urban Form study, see the UIG August 9, 1994 report in the Growth Management Element appendix.

containment and consolidation. Many motorized work- and non-work-related trips may be eliminated and replaced by walking or cycling.²

The effect of such measures on vehicle trips and VMT reductions are hard to model. Nevertheless, empirical evidence of the positive effects of land-use on transportation abound.³ According to a study conducted by the California Air Resources Board, (ARB) mixed-use development and increased densities can reduce 4-to-11 percent of a region's vehicle trips and 20 to 50 percent of site-specific trips.

LAND USE AS A MOBILITY STRATEGY

In addition to enhancing regional mobility, achieving clean air standards, and reducing energy consumption, a land-use component of the mobility strategy is expected to maximize access to the transportation system and options to choose among travel modes. Land-use decisions should also enhance economic development and help avoid social polarization.

The land-use component of the mobility strategy is based on the premise that local jurisdictions are instrumental in the decision-making process regarding urban form and have the primary authority regarding land use decisions. The proposed strategy reflects the subregional and local input to the RME Discussion Draft and the Growth Management Element (GME).

The general consensus emerging from subregional plans⁴, comments, and recommendations received is that land-use policies should be part of a strategy to improve regional mobility. The preferred approach to meet mobility, air quality, and sustainable economic development is the small scale localized implementation of land-use measures. This does not necessitate redirecting future development regionwide, or massive concentration of new development along transit stations and transit corridors.

Changes to existing zoning, general plan amendments, and specific plans that encourage concentrated, mixed-use, transit- and pedestrian-oriented

² The Urban Form study was revised to address comments received at meetings of policy and technical advisory committees, and comments of SANBAG, MTA, NRDC, ARB, City of Brea, and City of Simi Valley.

³ Calthorpe Associates, "Transit Oriented Development Design Guidelines", 1992 for the City of San Diego. Holtzclaw/NRDC, "Explaining Urban Density and Transit Impacts on Auto Use", 1990. Local Government Commission, "Land Use Strategies for Livable Places", 1992. Transit/Residential Access Center, "Incentives for Trip reduction Through Location of Housing Near Rail Transit Stations", 1991. Air Resources Board, "CCAA Guidance for the Development of Indirect Source Control Programs", 1990.

⁴ This position reflects the growth management goals and policies in the Arroyo Verdugo, San Gabriel Valley, VCOG and WRCOG subregional plans, and comments and recommendations from Los Angeles City, CVAG, SANBAG, ARB NRDC, MTA, SCAQMD, California Environmental Associates, and city of Simi Valley.

development, are tools that can be used by local jurisdictions to foster land-use policies, which, along with adequate Transportation Demand Management (TDM) programs and non-motorized infrastructure, can reduce environmental and economic costs of motorized trips.

Local actions to affect site-specific patterns of development include allowing the combination of usually separated land uses within a single development; increasing development density along transit corridors and/or stations; clustering development to preserve open space; achieving better jobs/housing balance at the micro-scale, and a better match between the types of jobs and the price of housing. Such actions can be carried out through local jurisdictions' regulatory powers.

Design standards improvement actions are another category that could affect urban form at the local level. These include the provision of physical features that encourage transit use, cut the need for cold starts, and encourage pedestrian and bicycle travel. Amenities such as bus shelters and bus pullouts to improve transit, physical improvements that support pedestrian traffic, the construction of bike lanes and provision of secure bike racks and parking arrangements that facilitate ride sharing can help achieve the vehicle trip reduction goals.

Local land-use policies that foster mixed- and higher-density uses should target both work and non-work trips. It should also be recognized that localized changes in urban form are incremental, and their resulting impacts on mode split and congestion are long-range, not likely to be felt until after 2010.

The highest priority should be assigned to projects and programs designed to maximize the effectiveness of alternatives to solo driving. SCAG, having the responsibility to determine transportation system conformity, could use this technique to ensure implementation of coordinated land-use and transportation policies. Communities that demonstrate a commitment to adopt zoning and approve development consistent with proposed transportation projects would be given priority in funding.

The following policies in the Growth Management Element support goals and objectives of this proposed land-use component of the RME strategy:

- The timing, financing and location of public facilities, utility systems, and transportation systems shall be used to implement the region's growth policies and to achieve the desired regional form.
- SCAG shall encourage patterns of urban development and land uses that reduce costs on infrastructure construction and make better use of existing facilities.

- SCAG shall support and encourage settlement patterns that contain a range of urban densities.
- SCAG shall support provisions and incentives created by local jurisdictions to attract housing growth in job-rich subregions and job growth in housing-rich subregions.
- SCAG shall encourage local jurisdictions' efforts to achieve a balance between the types of jobs they seek to attract and housing prices.
- SCAG shall encourage existing or proposed local jurisdictions programs aimed at designing land uses that encourage the use of transit and thus, reduce the need for roadway expansion, reduce the number of auto trips and VMT, and create opportunities for residents to walk and bike.
- SCAG shall encourage local jurisdictions plans that maximize the use of existing urbanized areas accessible to transit through infill and redevelopment.
- SCAG shall support local plans to increase density of future development located at strategic points along the regional commuter rail, transit systems, and activity centers.
- SCAG shall support local jurisdictions strategies to establish mixed-use clusters and other transit-oriented developments around transit stations and along transit corridors.
- SCAG shall encourage developments in and around activity centers, transportation node corridors, under-utilized infrastructure systems, and areas needing recycling and redevelopment.

accessibility	A measure of the ability or ease of all people to travel among various origins and destinations.
action	A specific activity to be undertaken as a step toward achieving a particular policy/goal.
airport ground access	Facilities and services for air passengers and air freight handlers to reach airport terminals, e.g., highways, public transit, taxi, or other means of ground transportation.
AVO	average vehicle occupancy
AVR	average vehicle ridership
bikeway	Any road, street, path, or right-of-way that is specifically designated in some manner as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other vehicles or pedestrians.
busway	A special roadway designed for exclusive use by buses. It may be constructed at, above, or below grade and may be located in separate rights-of-way or within highway corridors.
bypass lane	A reserved traffic lane on a metered freeway entry ramp which permits buses or high-occupancy-vehicles to have preferential treatment when entering the freeway.
CBD	central business district
COG	council of governments
CPI	consumer price index
capital costs	Nonrecurring or infrequently recurring costs of long-term assets, such as land, guideways, stations, buildings, and vehicles. These costs often include related expenses, for example, depreciation and property taxes. See also <i>operating costs</i> .
carpool	An arrangement in which two or more people share the use, cost, or both of traveling in privately owned

	automobiles between fixed points on a regular basis; <i>see also vanpool.</i>
carpool lane	A highway or street lane intended primarily for carpools, vanpools, and other high-occupancy-vehicles, either all day or during specified periods. It may be used by other traffic under certain circumstances, such as while making a right turn.
Centers-Based Transit Network	A multimodal transit system that connects regional activity centers with their surrounding communities, sub-regional areas, and Southern California as a whole.
commercial aviation	Aircraft activity licenses by state or federal authority to transport passengers and/or cargo for hire on a scheduled or nonscheduled basis.
commuter rail service	Short-haul rail passenger service operated within metropolitan and suburban areas.
commuter service	Transportation provided on a regularly scheduled basis during peak travel periods for users commuting to work, school, and similar destinations.
Commuter Transportation Service (Commuter Computer)	Nonprofit corporation which provides information and marketing services to aid the formation of ridesharing.
congestion	Traffic conditions on roads, highways, or freeways which do not permit movement on the facility at optimal legal speeds. Characterized by unstable traffic flows. Recurrent congestion is caused by excess volume capacity. Nonrecurrent congestion is caused by actions such as special events and/or traffic accidents.
Congestion Management Program(s) (CMP)	A state mandated program for counties containing urbanized areas to provide for statutorily specified programs to reduce traffic congestion.
commute	Regular travel between home and a fixed location (e.g., work, school).
corridor	In planning, a broad geographical band that follows a general directional flow or connects major sources of trips. It may contain a number of streets and highways and transit lines and routes.
demand	1. The quantity (of transportation) desired. 2. In an economic sense, a schedule of the quantities (of travel)

	consumed at various levels of price or levels of service offered (by the transportation system).
discretionary funds	Any funds whose distribution is not automatic. Decisions on the distribution of discretionary funds are usually made by an agency or person on the basis of that agency's or person's choice or judgment and in accordance with criteria set out in laws or regulations.
EPA	Environmental Protection Agency
employment centers	Locations having a concentration of jobs or employment. Centers may vary in size and density, serving subregional or local markets, generally meeting the needs of the immediate population.
equity	In transportation, a normative measure of fairness among transportation users.
express bus service	Bus service with a limited number of stops, either from a collector area directly to a specific destination or in a particular corridor with stops en-route at major transfer points or activity centers. Express bus service usually uses freeways or busways where they are available.
expressway	A divided arterial highway for through traffic. An expressway has full or partial control of access and generally has grade separations at major intersections.
FTA	Federal Transportation Authority (formally <i>Urban Mass Transportation Administration - UMTA</i>)
facility	A physical structure allowing a transportation mode to operate (including travel, as well as the discharge and loading of passengers). This includes highways, guideways, terminals and administrative support locations.
feeder service	1. Local transportation service that provides passengers with connections with a major transportation service. 2. Local transit service that provides passengers with connections to main-line arterial service; an express transit service station; a rail rapid transit, commuter rail, or intercity rail station; or an express bus stop or terminal.
fixed cost	A cost that remains relatively constant irrespective of the level of operational activity; expenditures that do not

	vary with output. Examples include land, guideways, rent.
fixed route transit	Regularly scheduled service operating repeatedly over the same street or highway pattern on a determined schedule.
flexible work hours or flextime	A work schedule in which employees can schedule the required number of work hours as they wish. It differs from staggered work hours in that it is the employee, not the employer, who sets the starting and ending times.
general aviation	All aircraft which are not commercial or military aircraft.
grade crossing	A crossing or intersection of highways, railroad tracks, other guideways, or pedestrian walks, or combinations of these at the same level or grade.
guideway	In transit systems, a track or other riding surface (including supporting structure) that supports and physically guides transit vehicles especially designed to travel exclusively on it.
high capacity transit	Transit systems operating, in whole or part, on a fixed guideway, dedicated right-of-way or freeway/express facility using a service configuration with the capability to provide a unit capacity of 15,000 or more trips per hour.
High-Occupancy-Vehicle (HOV)	Motor vehicle occupied by two or more persons. Vehicles include automobiles, vans, buses, and taxis.
High-Occupancy-Vehicle Lane	Lanes on a highway or freeway which are restricted for use by vehicles carrying two or more passengers with the exception of motorcycles.
high-speed rail	Passenger rail service with operating speeds in excess of 125 miles per hour and limited stops (e.g., Japanese Bullet Trains, French TGV and experimental maglev systems).
hub-and-spoke (radial)	Transit routes that radiate outward from and return to a designated area/transit facility on a time singly or multi-pulse. Service may be bi-directional or operate uni-directional using a street couplet configuration. Radial routes may be inter-connected to form a through configuration and reduce transfers required on high demand routes. Inter-route transfers are accommodated

	at a transit facility or designated transfer area. Multi-pulses are often off set to assure inter-route transfers or to mitigate physical space restraints.
incentives	Measures designed to encourage certain actions or behavior. These include inducements for the use of carpools, buses and other high-occupancy vehicles in place of single-occupant automobile travel. Examples include HOV lanes, preferential parking and financial incentives.
infrastructure	The basic facilities, equipment, services, and installations needed for the growth and functioning of a community.
intermodal	Between or including more than one means of mode of transportation.
Intermodal Surface Transportation Efficiency Act (ISTEA)	Signed into federal law on December 18, 1991, it provides authorizations for highways, highway safety, and mass transportation for the next 6 years and serves as the basis of federal surface transportation programs.
intersecting grid	Transit routes, usually bi-directional, provided on parallel streets and arterials in east/west and north south/configurations. Boards/alights only at designated stops with transfers accommodated at route intersection points.
intra-regional service	A multi-modal transit service, regional in orientation, connecting major transportation facilities in two or more subregional areas through the use of high and medium capacity transit, operating in whole or part, on fixed guideways, dedicated right-of-ways or freeway/express applications.
LRT	Light rail transit
Level of Service (LOS)	A measure of the congested level on a highway facility based primarily on the comparison between the facility's capacity and the traffic volume it carries. Increasing levels of congestion are designated along a scale from A to F where A is for best operation (low volume, high speed), and F is for worst conditions.
line-haul transit	Transit operations (generally express) along a single corridor or variety of corridors.

local service	Transit service oriented toward the access, egress and distribution within a specific regional activity center, its component transit attractor/generators, with a service focused on local Transit Hubs, Park-N-Ride and/or Multi-modal Station Facilities. Services operated may include fixed route, para-transit and private-for-hire in both traditional and non-traditional applications.
low-capacity transit	Local fixed-route or para-transit using traditional route configurations, delayed/real-time dispatch service operating on major/minor arterial and local streets. Levels of service may vary substantially by time of day/season of the year with a unit capacity which does not usually exceed 3000 trips per hour.
MPO	Metropolitan Planning Organization.
medium-capacity transit	Transit system operating on a fixed guideway, dedicated right-of-way or freeway/express facility using a service configuration with the capability to provide a unit capacity of 3000-15000 trips per hour.
mixed flow	Traffic movement having autos, trucks, buses, and motorcycles sharing traffic lanes.
mobility	A transportation system user characteristic referring to the ability of the user to take advantage of the available transportation service.
mode	A particular form of travel (e.g., walking, traveling by automobile, traveling by bus, or traveling by train).
model	A mathematical description of a real-life situation that uses data on past and present conditions to make a projection about the future.
mode split	The proportion of total person-trips using various specified modes of transportation.
multimodal	Concerning or involving more than one transportation mode.
multi-modal station	A developed station facility on a designated rail line designed to accommodate user access, egress and distribution between transportation modes (primarily local bus/rail/auto) and the intra-regional/subregional services components. Substantial passenger amenities, user information services and access to other

	transportation facilities may be provided on site, through shuttles or by walk links to adjacent areas.
NPTS	Nationwide Personal Transportation Survey
needs assessment	In transportation planning, a technique of estimating the services and facilities needed to satisfy the potential demand for transportation service.
network	1. In planning, a system of links and nodes that describes a transportation system. 2. In highway engineering, the configuration of highways that constitutes the total system. 3. In transit operations, a system of transit lines or routes, usually designed for coordinated operation.
operating costs	The sum of all recurring costs (e.g., labor, fuel) that can be associated with the operation and maintenance of the system during the period under consideration.
operator	Agency responsible for providing a service or operating a facility. (e.g., MTA is a transit operator, Caltrans is the operator of the State Highway System).
origin-destination study	A study of the origins and destinations of the trips of vehicles or travelers. It may also include trip purposes and frequencies.
para-transit (demand response)	Public or privately operated, regularly or dispatched on demand (delayed or real-time) providing "curb to destination" transit service. Normally used in specialized applications with user eligibility limitations (e.g., elderly and/or handicapped) or where demand is not sufficient to support fixed route service.
park and ride	An access mode to transit in which patrons drive private automobiles or ride bicycles to a transit station, stop, or carpool/vanpool waiting area and park the vehicle in the area provided for that purpose (park-and-ride lots, park-and-pool lots, commuter parking lots, bicycle rack or locker). They then ride the transit system or take a car- or vanpool to their destinations.
peak period	1. The period during which the maximum amount of travel occurs. It may be specified as the morning (a.m.) or afternoon or evening (p.m.) peak. 2. The period when demand for transportation service is heaviest.

performance indicator	(Measure of effectiveness) -- A quantitative measure of how well an activity, task, or function is being performed. In transportation systems, it is usually computed by relating a measure of service output or use to a measure of service input or cost.
person trip	A trip made by a person by any mode or combination of modes for any purpose.
pricing	A strategy for charging users. It may be used to ration demand (change behavior), cover costs, or achieve other policy objectives.
private-for-hire	Privately operated common carrier or contract service (e.g., taxi-cabs, jitneys, private shuttles, subscription bus or van services).
privatization	The contracting of public services or selling of public assets to private industry.
public transportation	Transportation service by bus, rail, para-transit, van, airplane, and ship offered by an operator on a regular basis to the general public.
ramp metering	Traffic signal control on an entry ramp to a freeway for regulating vehicle access.
region	The SCAG region comprises Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura Counties.
Regional Transportation Improvement Program (RTIP)	A 3-7 year multi-modal program of regional transportation improvements for highways, transit and aviation. The RTIP consists of projects drawn from the Regional Transportation Plan. The projects are directed at improving the overall efficiency and people-moving capabilities of the existing transportation system while incrementally being developed into the long-range plan.
Regulation XV	A regulation developed by the South Coast Air Quality Management District affecting public and private employers in the South Coast Air Basin. It is designed to reduce air pollution by reducing the number and type of commuter vehicle trips between home and working during the 6:00 a.m. to 10:00 a.m. period.
ridesharing	The cooperative effort of two or more people traveling together.

Rule 210	A trip reduction measure created by the Ventura County Air Pollution Control District to reduce air pollution by requiring employers to devise and implement methods to reduce single occupant vehicle trips by their employees. It targets worksites of 50 or more people.
staggered work hours	A work schedule in which employees' starting and ending times are staggered by the employer.
subregional service	A multi-modal transit service oriented toward access, egress and distribution between the regional activity centers within specific subregional areas, and providing connectivity to the intra-regional services. Service may be high and/or medium capacity transit operated in whole or part on fixed guideway, dedicated right-of-ways, major arterial streets and/or freeway/express facility applications.
system management	Increasing flow of travel on existing facilities through such improvements as ramp metering, signal synchronization, and removal of on-street parking, among others. Improvements typically have a low capital cost, do not call for major construction and can be implemented in a relatively short time frame.
telecommunications	The conveyance of information by electronic means. Examples include the telephone, interactive cable facilities, computer networks and video conference centers.
traffic signal synchronization	A process by which a number of traffic signals are synchronized to affect efficient progression.
transit dependent	Individual(s) dependent on public transit to meet private mobility needs (e.g., unable to drive, not a car owner, not licensed to drive, etc.).
transit facility	A physical structure developed for the specific use and support of transit.
transit hub facility	A developed facility or designated area (e.g. transit mall, El Monte bus station), on or off street, designed to accommodate inter-route transfers and distribution, route and system use information, fare medium sales and/or may be adjacent to other transportation facilities such as Park-n-Ride. A transit hub facility design can be as basic as an on street "pulse point" with minimal passenger amenities or as complex as a regional bus facility such as the El Monte Bus Station.

transportation center	Transportation terminal facilities or other locations where people can change their travel from ground transportation to other transportation modes (e.g., airports, seaports, spaceports).
vanpool	An organized ridesharing arrangement in which a number of people travel together on a regular basis in a van. The van may be company owned, individually owned, leased, or owned by a third party. Expenses are shared, and there is usually a regular volunteer driver. See also <i>carpool</i> .
Vehicle Miles Traveled (VMT)	1. On highways, a measurement of the total miles traveled by all vehicles in the area for a specified time period. It is calculated by the number of vehicles times the miles traveled in a given area or on a given highway during the time period. 2. In transit, the number of vehicle miles operated on a given route or line or network during a specified time period.
vehicle trip	The one-way movement of a vehicle between two points.

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CVAG	Mayor Pro Tem William Arenstein
WRCOG	Councilmember Denise Lanning
SANBAG	Supervisor Barbara Cram Riordan
VCOB	Councilmember Frank Schillo
City of LA	R. Ann Siracuss
Westside Cities	Councilmember Abbe Land
Arroyo-Verdugo	Vice Mayor George Battery, Jr.
	Vice Mayor Kathryn Nack
North County	Councilmember David Myers
	Councilmember Jo Anne Darcy
Orange County	Roger Stanton, Chair, OCTA
San Gabriel Valley	Mayor Terry Dipple
SELAC	Councilmember Evelyn Woods
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Concerns expressed by the SCAG subregions regarding the Regional Mobility Element are included in this section. These concerns were compiled by the SCAG technical liaisons to the subregions.

San Gabriel Valley Association of Cities (SGVAC)

The comments received from the SGVAC did not reflect any direct concerns regarding the RME. Nevertheless, they did choose to identify major transportation projects which were completed within the last year in the subregion. Metrolink commuter rail service from Union Station (Los Angeles) to San Bernardino and Riverside and a preliminary planning study that defined transit options for the Route 10/60 corridor (corridor has been included as a Candidate Corridor in LACMTA's 30 Year Plan) were among the major projects completed in the San Gabriel Valley.

The SGVAC also listed transportation projects under construction, planned and/or programmed in their subregion. Among the projects identified are:

- Extension of Metro Blue Line light rail service to Pasadena.
- Environmental review, clearance, and design efforts for the Foothill Freeway (Route 30) and the Long Beach Freeway (I-710) gap closures and the upgrade of the four lane Corona Expressway (Route 71) to a full freeway.
- Route 57/60 interchange improvements
- "Smart Street" corridors along Interstates 10 and 210, as well as Route 60.
- Completion of high occupancy vehicle lanes along I-210; and
- Design and extension of the El Monte Busway (I-10) to San Bernardino County.

The SGVAC has identified various transit and TDM projects in the San Gabriel Valley for evaluation, prioritization, and support. Listed below are some of the projects identified:

- Extension of the Pasadena Blue Line Light Rail system into the Foothill cities east of Pasadena.
- Express bus service to the San Fernando Valley.
- Development of additional Metrolink stations along the on the San Bernardino and Riverside lines.
- Pasadena Shuttle and parking management program.
- Pomona telecommuting center
- I-605 corridor rideshare marketing program; and
- Route 60 park-and-ride facility.

South East Los Angeles Association of Cities (SELAC)

SELAC's biggest concern is the need for economic revitalization. From a mobility perspective, this need can best be addressed by the provision of an effective goods movement system. The current recession has hit SELAC especially hard. For many years, SELAC was the dominant manufacturing center in the region. However, during the last decade, SELAC is the only subregion in the SCAG region to experience a net loss in employment.

During more prosperous economic times, the central component of SELAC's success was its rail, highway, and port facilities. These facilities offered SELAC access to regional, national, and international markets. While the SCAG region is economically depressed, SELAC feels that it is positioned to play a pivotal role in the region's economic recovery because of its access to facilities crucial for goods movement. In addition, the Alameda Corridor Project, which transverses SELAC, is slated as the number one public works project in the state. In order to pursue the goal of "economic vitality", as mentioned in *Chapter Two* of the RME, SELAC states that the region must give adequate attention to the issue of goods movement - especially the Alameda Corridor.

Imperial Valley Association of Governments (IVAG)

The economic implications associated with the new port of entry (East Border Crossing), just east of Calexico, and its required transportation improvements are the primary concerns for the IVAG. The IVAG has also stated its desire for the RME to include its 20 year Imperial County Transportation Plan.

Coachella Valley Association of Governments (CVAG)

The CVAG's chief transportation concern is that its plans and programs, especially the regional arterial program, be recognized in the RME.

Western Riverside Council of Governments (WRCOG)

The primary transportation concern for the WRCOG, regarding the RME, is implementation of the Intracounty road system/network to serve existing and forecasted growth.

San Bernardino Associated Governments (SANBAG)

No comments have been submitted as of November 11, 1993.

City of Los Angeles

The City of Los Angeles subregion had various comments regarding the content of the RME. The City recommends that the RME maintain a balanced approach among infrastructure development, TDM, TSM, and transit. They specifically stressed that we give serious consideration to HOV lanes and the use of such lanes by buses. Additionally, they urged that we encourage competitive bidding for transit service. LADOT has found this process to be cost-effective as well as efficient. In order to make rail transit accessible for all, the L.A. City subregion strongly suggest that we identify the use of feeder buses to and from transit station. Lastly, the subregion also favors high-technology solutions that enhance the carrying capacity of existing facilities.

The RME is a long-range, multi-modal and intermodal transportation maintenance and development during a 20-year time frame. It is clearly recognized, however, that the RME is prepared in a dynamic environment involving population, housing, employment, land-use forecasts, and technological change. Revenue streams may become available or may be discontinued. Cost assumptions may need to be adjusted. Therefore, it is necessary to understand that even though decision-makers fully anticipate and are committed to the implementation of the RME, amendments to an RME may be necessary from time to time.

The RME is prepared in accordance with state and federal requirements. Both the federal and state requirements recognize that the plan must be reviewed for efficacy every two or three years and require that a "new" plan be prepared or that the existing plan be rectified. Historically, SCAG has prepared a "new" RME approximately every four years (with an environmental impact statement) and annual or biannual recertifications which include minor amendments with a "negative declaration" to meet environmental requirements.

The Clean Air Act Amendments of 1990 and the ISTEA of 1991 have added a new requirement to the metropolitan transportation planning process. The RME must be prepared in conformity with the State Implementation Plan (SIP) for air quality with regard to the appropriate air basins. A new conformity statement must also be prepared whenever the RME or the TIP is amended.¹

Recognizing the need for amendments, SCAG will commit to at least one major amendment, if needed, every two years between plan adoption dates. This includes preparation for the conformity statement. Plan amendments that do not require preparation of a conformity statement may be prepared more frequently.

¹ If amendments to the Plan or Program do not affect air quality, a new conformity statement may not be required. However, this is not clearly stated in federal statutes, and it may be necessary to prepare a conformity report no matter how minor the amendment to the Plan or Program may be.

**TABLE 1-4
REQUIRED ISTEA PLANNING FACTORS**

No.	Factor	SCAG Response
1.	Preservation of existing transportation facilities and, where practical, ways to meet transportation needs by using existing transportation facilities more efficiently.	<p>The currently adopted 1989 Regional Mobility Element includes the following goal - "Maximize the productive use of existing facilities by implementing system and demand-management techniques in a cost-effective manner."</p> <p>In developing the Transportation Improvement Program, SCAG determines consistency by a careful examination of proposed projects against the adopted goals, policies, strategies, and objectives of the adopted plan.</p> <p>No change to the goal is proposed in the 1993 RME.</p>
2.	The consistency of transportation planning with applicable Federal, State, and local energy conservation programs, goals, and objectives.	<p>A proposed goals of the 1993 RME is to reduce energy consumption. Methods of reducing consumption, from transportation control measures to transportation demand management, are proposed in the Element.</p> <p>SCAG's planning program recognizes Federal, State, and local energy laws, statutes, ordinances, and regulations in developing proposed programs and projects.</p>
3.	The need to relieve congestion and prevent congestion from occurring where it does not yet occur.	<p>California statute governing Congestion Management Programs requires that the CMPs developed by Congestion Management Agencies be incorporated into the Mobility Element.</p> <p>SCAG is examining the requirements for the federal Congestion Management System. These requirements, if different from California law, will be addressed in subsequent updates of the Regional Mobility Element.</p>

4.	The likely effect of transportation policy decisions on land use and development and the consistency of transportation plans and programs with the provisions of all applicable short- and long-term land use and development plans.	<p>In addition to serving as the MPO for a significant portion of Southern California, SCAG is also a comprehensive planning organization with state mandated responsibilities including, but not limited to growth management, housing, and air quality. SCAG's decision-making process includes representation from other functional planning programs besides transportation thus insuring that the effects of transportation decisions on other functional areas, and vice versa, are considered when it takes policy actions.</p> <p>An element strategic goal is "to promote transportation friendly development patterns." One of six strategies is urban form, that emphasizes the integration between land use and transportation in activity center and areas as well as project designs.</p>
5.	The programming of expenditures on transportation enhancement activities as required in Section 133.	<p>Decisions regarding projects to be funded with transportation enhancement funds under Section 133 are made by the California Transportation Commission and local transportation commissions and are coordinated with SCAG.</p> <p>SCAG encourages that Transportation Enhancement projects be funded in accordance with ISTE A while respecting regional policies.</p>
6.	The effects of all transportation projects to be undertaken within the metropolitan area, without regard to whether such projects are publicly funded.	<p>The SCAG region is large, complex, and diverse. While almost all publicly funded projects are required to be included in SCAG's Transportation Improvement Program, privately funded projects are not. One of the six strategies in pricing/market incentives. The element sets criteria for public and private reasonably available and innovative funding sources.</p> <p>However, SCAG under the Intergovernmental Review Process, learns of a number of privately funded transportation projects through the environmental process (NEPA or CEQA). As appropriate, SCAG comments on environmental documents which creates a loop between the public and private sectors.</p>
7.	International border crossings and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation areas, monuments, and historic sites, and military installations.	The RME identifies ports, airports, (including military) multi-modal Transportation facilities, and freight distribution routes and international border crossings (Calexico in Imperial County, as part of the Metropolitan Transportation System.

8.	The need for connectivity of roads within the metropolitan area with roads outside the metropolitan area.	In developing recommendations for the National Highway System, SCAG ensure that the metropolitan planning area was connected with other metropolitan areas throughout California and those areas outside California adjoining the SCAG region.
9.	The transportation needs identified through the use of the management systems required by section 303 of this title.	<p>The Management Systems required by Section 303 will be in place by October 1, 1994.</p> <p>To date, SCAG is participating with other California MPOs and Caltrans in developing those systems.</p>
10.	Preservation of rights-of-way for construction of future transportation projects, including identification of unused rights-of-way which may be needed for future transportation corridors and identification of those corridors for which action is most needed to prevent destruction or loss.	The RME includes the RTIP, which describes right of way purchases, long range corridor studies are part of the RME.
11.	Methods to enhance the efficient movement of freight.	SCAG's transportation planning program includes participation from the "freight" community. A "Truck Task Force" has actively examined proposed model ordinances governing freight transportation. SCAG's previous work included support for the Alameda Corridor access projects, numerous airport access studies including access for air freight, and studies of how the existing rail system in Los Angeles can be improved. Currently SCAG is participating in a study to electrify the rail system in the South Coast Air Basin. While the emphasis of this study is directed towards air quality, the impact on the movement of freight will be considered. The RME has a goods movement chapter.
12.	The use of life-cycle costs in the design and engineering of bridges, tunnels, or pavement.	<p>SCAG is participating with other California transportation planning agencies and Caltrans to develop the Bridge Management and Pavement Management Systems required by Section 303.</p> <p>In developing the financial plans for both the Mobility Element and the TIP, SCAG includes full costing provisions -- capital, operating and maintenance.</p>

13.	The overall social, economic, energy, and environmental effects of transportation decisions.	<p>The Environmental Impact Statement/Report that accompanies the Regional Mobility Element addresses the social, economic, energy, and other environmental impacts of transportation decisions.</p> <p>The six goals include "foster economic vitality "and "reduce energy consumption." Special attention is given to specific ways marked Transportation can foster economic vitality and reduce energy consumption.</p>
14.	Methods to expand and enhance transit services and to increase the use of such services.	<p>SCAG's adopted transit goal of a 19% mode split for the home-work trip is being achieved by a variety of incentives for using the transit system. The objective in the RME will be revised to be 10 to 13%. Different mixes of the six strategies were modelled in an effort to fixed the best way to enhance transit ridership. This includes support for revisions to the Internal Revenue Code to provide for tax benefits for transit riders, pricing mechanisms for discouraging single occupant vehicles, as well as encouragement for flexibility between highway and transit funds.</p>
15.	Capital investments that would result in increased security in transit systems.	<p>Specific programming decisions are carried out by local transportation commissions in the SCAG region. SCAG supports investments that provide added security to the transit system both to protect the user of the system as well as the capital investment of the system.</p>

STATUS OF TSM ACTIONS RECOMMENDED IN THE 1989 RMP

AGENCY	TSM PROJECT	ACTION
City of Los Angeles	Traffic Signal Synchronization	o Implementing a five phase ATSAC program in the Victory-Ventura corridor incorporating the 101 freeway.
Los Angeles County	Traffic Signal Synchronization	o The Metropolitan Transportation Authority (MTA) recently approved the establishment of a signal support group to oversee the implementation of a program to coordinate the operation of 10,000 traffic signals in Los Angeles County.
Orange County	Traffic Signal Synchronization	o Six signal synchronization and sixteen intersection improvements projects.
San Bernardino County	Traffic Signal Synchronization	<ul style="list-style-type: none"> o City of Chino received ISTEA fund for signal synchronization and has budgeted these funds for synchronization on major streets. o City of Fontana - Citrus Ave. synchronization is completed and Sierra Ave. is underway. o City of Loma Linda has applied for a FETSIM grant to synchronize signals on Barton Rd., Mountain View Ave., and Redlands Blvd. o City of Montclair - synchronization of all arterials and Montclair Plaza; Citywide traffic model with developer fee mechanism for roadway improvements. o City of Ontario has had synchronization and coordinated traffic signal program which is computer implemented since 1984. o City of Rancho Cucamonga has traffic model program that identifies "hot spots". o City of Redlands completed intersection channelization and signal replacing 4-way stop at California Street and Redlands Blvd. o City of Rialto--Foothill Blvd. (Rte. 66) has been synchronized; Application has been submitted for funding of Baseline Rd. (Rte. 30). o City of San Bernardino completed several interconnect projects throughout the city with others pending. o City of Yucaipa--development impact fee program will pay for implementation. o County of San Bernardino continues to implement signal synchronization throughout the County through land development process, CIP, and cooperation with SANBAG and its jurisdictions.
Orange County Transportation Agency	Smart Streets	o The Superstreet program in Orange County is a 220 mile network of arterial streets targeted for operational improvements by the Orange County Transportation Agency. The proposed improvements include signal synchronization, restriping, road widening, intersection grade separations, bus turnouts, removal of on-street parking, and intersection improvements. The network includes 21 major arterials throughout the County such as Beach Blvd., Katella Ave., and El Toro Rd.
Caltrans	Smart Streets	o The Santa Monica Freeway "Smart Corridor" demonstration project has been under construction and will be completed by the end of 1993.
Caltrans District #7	Nighttime Maintenance	o Implemented a program of increase nighttime maintenance to reduce the impacts of planned freeway closures. Currently, District #7 has a full crew of maintenance workers with normal nighttime duties.

AGENCY	TSM PROJECT	ACTION
Orange County	Traffic Operation Centers	o The Orange County Operations Study was completed in August 1991. The study identified a proposed location and staffing of a modern TOC with control over changeable message signs, ramp metering timing, dispatching of CHP officers and incident response teams.
Caltrans District #7	Traffic Operation Centers	o District #7 TOC has been updated to enhance integration of multi-agency traffic surveillance. The Los Angeles TOC is staffed 24 hours a day, 7 days a week with Traffic, Maintenance, and CHP personnel. District #7 has interlink with the City of Pasadena by the end of 1992. o An interim Traffic Operation Center located at the District Office (Phase I).
Caltrans District #7	Truck Accident	o Caltrans District #7 has developed restriction of trucks on certain freeways. Caltrans has activities involving end of queue notification and protection by Caltrans Incident Response team to avoid truck-related secondary accidents. Caltrans is working with the City of Los Angeles on truck ordinance for truck rescheduling and re-routing.
California Highway Patrol	Truck Accident	o The California Highway Patrol reports that many steps have been taken over the last several years in an attempt to reverse the increase in truck accidents.
Caltrans #12	Changeable Message Signs	o The Changeable Message Signs (CMS) system has been expanded in 1992 and will continue in future years as part of the Anaheim Traffic Management Demonstration Project and Traffic Management facilities included in the widening of Route 5, 55, and 57. o \$20 million proposal for TSM projects including additional CMS.
Caltrans #12	Closed Circuit Television	o Closed Circuit Television will be initiated via the Traffic Management Plan which provided for the widening of Routes 5 and 55. o \$20 million proposal for TSM projects including additional CCTV.
Caltrans # 12	Ramp Meter	o The ramp metering system will be expanded to include the southern portion of southbound Route 5. o \$20 million proposal for TSM projects including additional ramp meters.
California Highway Patrol	Media Information Personnel	o Media information personnel has been provided by CHP.
Caltrans #12	Dispatch Freeway Service Patrol	o Dispatch Freeway Service Patrol
Caltrans #12	Two-way Radio Base Stations	o Two-way Radio Base Stations.
Caltrans #12	Electronic Loop Detectors	o \$20 million proposal for TSM projects including electronic loop detectors.
Caltrans #12	Communications System Enhancements	o \$20 million proposal for TSM projects including electronic loop detectors.

AGENCY	TSM PROJECT	ACTION
MTA	Freeway Patrol	<ul style="list-style-type: none"> o MTA, in cooperation with Caltrans and CHP, has implemented the largest Freeway Service Patrol program in the nation. Service started in July 1991. Over 88 tow trucks patrol over 200 miles of freeway during peak periods assisting stranded motorists. o The 1991-92 annual statistics for the MTA FSP program shows that over 155,000 motorists received assistance/services. These same statistics illustrate the majority of motorists are receiving services in less than 10 minutes as opposed to the normal 20 to 30 minutes for response times to a call for assistance. Due to the success of the program, MTA has proceeded with plans to expand the service throughout Los Angeles County. In cooperation with MTA and other local transportation agencies, the CHP and Caltrans are expanding the FSP program to include all urban freeways within the state. This expansion will include Riverside County, Orange County, and additional miles in Los Angeles County.
California Highway Patrol	Incident Command System	<ul style="list-style-type: none"> o The CHP has been assigned responsibility for emergency incident coordination and management at emergency incidents where the CHP has primary investigative authority. This responsibility may be as incident commander where an incident is contained totally within CHP jurisdiction or may be operational when the incident is beyond the CHP exclusive jurisdiction. The ICS has been established as the response mechanism for all CHP emergency incidents.
California Highway Patrol	Special Services Commander	<ul style="list-style-type: none"> o The Special Services Commander will be responsible for all commercial, air operations, and investigative services programs within that division. This reorganization of program responsibility is designed to centralize coordination and enhance communication and management of the impact programs.

APPENDIX H: SUMMARY OF PERFORMANCE INDICATORS FOR RME MODELING ALTERNATIVES FOR 1990 AND 2010

ALTERNATIVES:	1990	89 RMP	Baseline I	Current Local Plans (CLP)	Constrained Project (EIR Project)	Innovative Project
PURPOSE:	Current Condition	Comparing impacts of <u>new SED</u> forecast on 89 RMP Adopted Plan	Baseline <u>without</u> mixed flow Hwy. improvements, Measure 13, 1991 AQMP, Per SCAG's agreement with ARB.	Identify impacts of projects by CTCs and Caltrans as of 7/93	Revised CLP (w/ <u>minor</u> <u>Policy TDM</u> , <u>Pricing</u>) changes and improvements based on <u>Reasonably Available Funds</u> .	Preferred 1 <u>w/ moderate Policy TDM</u> , <u>Pricing</u>) changes to <u>achieve 1.5 AVR for all trips & pricing</u> improvement based on <u>Reasonably Available Plus Innovative Funds</u> .
PERFORMANCE INDICATORS:						
TOTAL PERSON TRIPS	48,867,000	63,462,000	65,878,000	65,878,000	65,878,000	65,878,000
HBW PERSON TRIPS ^d	8,836,000	12,002,000	11,927,000	11,927,000	11,927,000	11,927,000
DAILY VEHICLE TRIPS	34,321,000	41,413,000	45,119,000	44,813,000	44,305,000	43,417,000
VEHICLE TRIPS (HBW)	7,386,000	5,629,000	8,815,000	8,646,000	8,268,000	7,857,000
AVERAGE VEHICLE OCCUPANCY (HBW)	1.128	1.186	1.151	1.151	1.160	1.154
AVERAGE VEHICLE RIDERSHIP (HBW) ^a	1.196	1.492	1.248	1.272	1.330	1.350
AVERAGE VEHICLE RIDERSHIP (ALL TRIPS) ^a	1.424	1.532	1.439	1.449	1.466	1.486

ALTERNATIVES:		1990	89 RMP	Baseline 1	Current Local Plans (CLP)	Constrained Project (EIR Project)	Innovative Project
HBW PERSON TRIPS MODE SPLIT	ALONE	6,678,000	4,816,000	7,844,000	7,691,000	7,301,000	6,969,000
	SHARED	1,662,000	1,857,000	2,304,000	2,262,000	2,293,000	2,100,000
	TRANSIT	496,000	1,728,000	849,000	1,044,000	1,403,000	1,498,000
	TELECOM & WORK AT HOME	0.0 ^c	3,601,000	930,000	930,000	930,000	1,360,000
HBW MODE SPLIT %	ALONE	75.6%	40.1%	65.8%	64.5%	61.2%	58.4%
	SHARED	18.8%	15.5%	19.3%	19.0%	19.2%	17.6%
	TRANSIT	5.6%	14.4%	7.1%	8.7%	11.8%	12.6%
	TELECOM & WORK AT HOME	0.0 ^{c,c}	30.0% ^c	7.8% ^c	7.8% ^c	7.8% ^c	11.4% ^{b,c}
TOTAL DAILY TRANSIT ^a (ALL TRIPS)		1,105,423	3,750,000	1,670,000	2,049,000	2,590,000	3,356,000
AVERAGE DAILY SPEED (ALL TRIPS)		31.8	32.0	20.1	26.4	27.5	28.5
DAILY HOURS OF DELAY (ALL TRIPS)		1,527,000	1,799,000	7,442,000	3,904,000	3,746,000	3,324,000
AM HOURS OF DELAY ^a (ALL TRIPS)		449,000	388,000	2,359,000	1,037,000	944,000	839,000
PM HOURS OF DELAY ^a (ALL TRIPS)		857,000	958,000	3,746,000	2,087,000	1,953,000	1,727,000
DAILY VHT ^a (ALL TRIPS)		8,932,000	10,425,000	21,549,000	15,586,000	15,023,000	14,539,000
DAILY VHT PER CAPITA ^a		0.63	0.54	1.13	0.82	0.79	0.76

<i>ALTERNATIVES:</i>	<i>1990</i>	<i>89 RMP</i>	<i>Baseline 1</i>	<i>Current Local Plans (CLP)</i>	<i>Constrained Project (EIR Project)</i>	<i>Innovative Project</i>
<i>DAILY VMT (ALL TRIPS)</i>	283,776,000	335,727,000	432,435,000	418,835,000	412,938,000	401,539,000
<i>DAILY VMT PER CAPITA ^a</i>	20.3	17.6	22.7	22.0	21.7	21.0

^a Added per advice of Transportation and Communication Committee and RME Strategic Committee.

^b 1 percent is due to Non-Motorized Transportation.

^c Trip reduction due to Telecommunication & Work at Home is in addition to the 2.5% model assumption validated for 1976.

^d Total HBW person trips before subtracting trips attributed to Telecommunication & Work at Home.

^e The trip reduction due to Telecommunications and work at home should be 4.1%, reflecting a total reduction of 6.6% due to current Telecommunications and work at home, but was not included in the 1990 model validation run.

SOCIOECONOMIC FORECAST AND MODELING PARAMETERS

- The SCAG model uses 1990 socioeconomic data derived from the national census and other sources. The socioeconomic forecast for 2010 was approved for planning purposes by the SCAG Regional Council during the summer of 1993.
- The total regional population for 2010 is 20.5 million, an increase of approximately 40 percent (2 percent/year) during 1990 (14.7 million) and 12 percent during the 2010 forecast in the adopted 1989 SCAG Regional Plan (18.3 million). The total regional employment for 2010 is 9.7 million, an increase of 37 percent (1.9 percent/year) from 1990 (7.1 million). Compared to the employment forecast used for 2010 in the 1989 Regional Plans (9.0 million), the new employment forecast is an increase of 7.8 percent. The distribution of the socioeconomic forecast is the same for five of the future alternatives and different for two of them: the 1989 RMP with a distribution based on the jobs/housing balance policy and the Urban Form Alternative that places about 50 percent of the new growth near rail stations.
- The region covered by the model is Los Angeles, Orange and Ventura counties as well as the contiguous urbanized areas of western San Bernardino and Riverside counties. Imperial County is not included. For the Final RME, Victorville and Coachella Valley will be included in model runs.
- The quantitative information in this Draft RME covers the period 1990 to 2010. A separately prepared Draft Environmental Impact Report will analyze the impacts of the Constrained Project to the year 2015. The 2015 alternative relies on the socioeconomic forecast extended from 2010 to 2015 and a transportation system that adds transit in Los Angeles, and Ventura counties, but no new high-occupancy vehicle lanes.
- The RTIP for future alternatives is the 1993-1999 version as updated by the county transportation commissions and Caltrans during July 1993. The amended version of this RTIP will be included in the final alternative proposed for adoption in first quarter of 1994.
- Several policies are common to most or all of the new modeled alternatives for the year 2010. For the South Coast Basin and Ventura County, all the alternatives represent employer trip reduction rules (Regulation XV etc.) as 80 percent effective. In all the alternatives, people working at home account for a 4.1 percent trip reduction and telecommunications results in a 3.7

percent trip reduction, except for the basic Innovative Project in which the total trip reduction reaches is 6.3 percent. Technological advances in the in the transportation freeway system improve capacity by 5 percent in all the alternatives, with the exception of the Innovative Project in which capacity increases by 10 percent. For all the scenarios, fuels are cleaned in accord with the ARB's regulations that require 10 percent zero-emission vehicles.

SCAG's Transportation and Communications Policy Committee, with the advice from the RME Strategic Committee, has approved several "working criteria" to be used in guiding decision-makers on project inclusion. Criteria are not designed established priorities. Projects need not meet all criteria.

Inclusion Criteria	
1	<ul style="list-style-type: none"> Does the project improve system performance? System Performance may be measured by various indicators depending on the mode. For example, Average Vehicle Occupancy (AVO) and congestion reduction may be used for highway projects, ridership per hour may be used for transit projects.
2	<ul style="list-style-type: none"> Does the project reduce reliance on single-occupant vehicles?
3	<ul style="list-style-type: none"> Does the project promote economic vitality? Economic development may be measured by industrial development, improved goods movement, enhanced investment in the region, and job creation/growth.
4	<ul style="list-style-type: none"> Does the project provide multi-modal or intermodal access to ports, airports, or other activity centers? Interconnectivity of modes increases the efficiencies of the transportation system. Will this project assist in increasing the efficiency of transportation?
5	<ul style="list-style-type: none"> Does the project support air quality goals? Federal and state law require that various reductions in emissions and Vehicle Miles Traveled (VMT) be achieved over time through implementation of the plan.
6	<ul style="list-style-type: none"> Does the project support local land-use planning? Research has indicated that land-use and urban form can influence the number and type of trips made by households. Will implementation of the project support reaching the land-use goals of the region?
7	<ul style="list-style-type: none"> Is reasonably available funding anticipated for the project including funding for capital, maintenance and operation? ISTEA requires that only those projects that are funded with reasonably expected funds may be included within the plan.
8	<ul style="list-style-type: none"> Does the Project demonstrate maximum leveraging of local funds to meet available state and federal funds?
9	<ul style="list-style-type: none"> Does the project include or involve market incentives?
10	<ul style="list-style-type: none"> Does the project use Advanced Transportation Technology for air quality or mobility?
11	<ul style="list-style-type: none"> Does the project promote energy conservation?

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